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ABSTRACT

The 10 papers in this report, selected from a series of 4 workshops, concern the planning of career and vocational education programs. The lead paper, by Corine Radice, gives the reader a perspective of a person working in a public high school trying to find help for students planning career decisions. The lead paper is followed by another on the social and personal perspectives of success in America by Donald Super and Albert Thompson. The third paper peruses the research on career decisionmaking, while Albert Thompson's paper concerns the occupational survival skills in the affective domain which employers expect of their employees. This paper is followed by Charles Doty's specific guidelines for writing objectives based on these employer expectations. In the next report, Elaine Douma and Thomas Gambino identify goals and behavioral indicators of students in grades K-14. Analyzing a job and developing a curriculum is the subject of the next paper by Robert Newman, while the following report by Victor Morella explains the monitoring system of students' progress in vocational classes in his school district. The last two papers concern evaluation. Raymond Wasdyke's paper explains the basic principle of performance testing, while Charles Doty and Rae Weissman suggest resources available for designing longitudinal evaluation studies. The last section of this report is a bibliography of sources concerning career education, career decision making, and related information. An addendum to the report is a draft of a paper on career education and quality circles by Thomas W. Gambino. (KC)

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CAREER EDUCATION AND THE AFFECTIVE DOMAIN

Choice, Success, Concepts, Survival Skills, Testing

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TABLE OF CONTENTS

Introduction 1

Papers 1

Review and Synthesis of Career Education Approaches toward Occupational Choice in the Secondary School
by Corine Radice 4

Success in America: Social and Personal Perspectives
by Donald E. Super and Albert S. Thompson 25

Career and Vocational Education: Integrating the Concepts
by Thomas W. Gambino and Donald E. Super 55

Career Education: Occupational Survival Skills
by Albert S. Thompson 96

Writing Affective Objectives
by Charles R. Doty 119

K-14 Goal Matrix
by Elaine Douma and Thomas W. Gambino 124

Competency Based Vocational Programs: Rationale and Process
by Robert Newman 153

Monitoring Student Skill Development: A Systems Oriented Approach to Vocational Education
by Victor C. Morella 164

Occupational Competency Performance Testing: Principles of Test Construction
by Raymond Wasdyke 182

Research and Sources Concerning Longitudinal Studies
by Charles R. Doty and Rae Weissman 205

Bibliography
by Charles R. Doty 217

Introduction

The original purpose of the proposal, for which this report was written, was to produce an organized body of knowlege which would aid teachers and administrators in planning career and vocational programs and applying them effectively throughout the kindergarten and adult levels. This purpose has been partially accomplished due to the efforts of many persons.

To achieve this purpose four workshops were conducted in which 26 persons made presentations and 126 persons participated. Those papers selected for this report were those which seemed scholarly and most informative for a reader seeking information concerning the planning of career and vocational programs.

Papers

The lead paper by Corine Radice gives the reader a perspective of a person working in a public high school trying to find help for students in their career decision making. Radice's paper is a record of a search for help--not a fictitious term paper.

The lead paper is followed by a paper titled Success in America: Social and Personal Perspectives by Donald Super and Albert Thompson. Perhaps this is one of the most important topics with which educators should concern themselves. The lead articles in many newspapers have such titles as "Success and Alcoholism" or "Work and Life." The complexity of career decision making goes far beyond just deciding on a particular line of work. A person is really making a decision concerning how, why, and perhaps, where one may live, i.e., quality of life.

The third paper concerning concepts common to career education and vocational education contains one of the most thorough analyses of concepts and corresponding research that is probably available. A person unfamiliar

with authorities and research concerning career decision making will find this paper invaluable.

Albert S. Thompson's paper concerns the occupational survival skills in the affective domain which employers expect of their employees. This paper is followed by a paper (Doty) giving specific guidelines for writing affective objectives based on these expectations.

The Elaine Douma and Thomas Gambino K-14 Goal Matrix is the result of three years of work to identify goals and behavioral indicators of students achieving the goals throughout the different grade levels. A person developing curriculum should certainly examine and use this report for sequencing instructions.

If one wishes to analyze a particular job and develop a curriculum the report by Robert Newman should be read. Newman explains the process of analysis (DACUM) Develop a Curriculum and how the result of analyses are used by teachers in his school district.

Assuming one has analyzed the requirements of a job and developed the curriculum, Morella's report shows how his school district has vocational teachers monitor student progress. Basically this technique is a student occupational profile which in the past was a common (and required) technique. It seems though that many teachers have not been taught this technique.

The last two papers concern evaluation. Wasdyke's paper explains the basic principle of performance testing. Occupational competency testing or clinical testing is an area long ignored by test experts and educators. With an increased demand for licensing examinations this area should expand rapidly. But if the testing is not based on a sound analysis of job requirements the test designers may find themselves facing law suits which they will lose.

In addition to the performance testing which occurs during and immediately after an education program another type of evaluation is needed. This type is the longitudinal study. Doty and Weissman give resources available to help design longitudinal studies.

The last section of this report is a bibliography of sources concerning career education, career decision making and related information. An ERIC computer search in November 1981 revealed over 7,400 sources. The items listed in this bibliography seemed to be those mentioned more often in the literature reviewed by the writers for this report.

Review and Synthesis of Career Education Approaches Toward Occupational Choice in the Secondary School

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The impetus for this review of research dealing with career education approaches toward meaningful student occupational choice in the secondary school was originated by this writer's concern in supervising student admissions into an area vocational technical school district in New Jersey. The concern focused not only on the actual program selection requested by potential students or how the students were recruited for the school, but by the motivating factors behind student program selection, i.e., parent influence, home school counselor influence, peer group influence, and self-motivating factors such as interests, abilities, or "hero worship" of an influential person in the student's life.

Another concern was an inability by the school to increase target population enrollment even though active attempts at recruiting for vocational education programs among minority populations, i.e., Black, Hispanic, the handicapped, and women into non-traditional occupational areas, were tried. Target population enrollment not only remained the same, but the actual dropout percentage began to increase over the last two years.

Representatives of various vocational technical school districts in New Jersey indicated at in-service workshops that their career education

approaches toward student occupational choice were extensive and that a variety of standardized tests were utilized in helping potential students.

Since this dichotomy exists among New Jersey vocational technical school districts, it seemed that a review of career education research, as it relates to student occupational choice in vocational schools, would provide a basis with which to either maintain the present procedures for student admissions or to recommend changes based upon the findings of the review of the research. In selecting the research for inclusion in this review, the following criteria were considered:

1. The study of the research can be adapted for local educational choice.
2. The findings of the research can be adapted for local educational use.
3. The research seemed to be valid and reliable.
4. The studies were available through ERIC.

Introduction

A vocational choice is often a very difficult process whether one is a student in high school or has been in the labor force for a few years. The basic characteristic that makes choices difficult is that there are consequences for each choice. There are many positive consequences connected with an individual's selecting an appropriate occupation, and there can be negative consequences. When a person succeeds in an occupation and is satisfied, the person becomes a productive member of society and is happy in that particular role. If the person selects an inappropriate occupation, the likelihood of that person's being both satisfied with his or her employment and being a satisfactory employee is greatly minimized. If a high school student is selected or admitted into a training program in which he cannot succeed, then that decision will have negative consequences. Another student with the ability to succeed may be excluded from the program.

How do people, especially high school students, select a vocational program or an occupation in which they want to be trained? Labor market studies show that job information is spread by word of mouth. Most matching of available people and available jobs takes place informally, since information is routinely spread by family and friends. Similarly, high school students who wish to attend vocational school are matched to available openings in an informal manner. Students who seek admission into vocational education programs or who are sought as potential enrollees by vocational school personnel are usually recruited on the basis of informal and sometimes very fragmeted information.

Career planning as a recruiting and selection device for vocational education students has been lacking. Career orientation and planning are treated as something apart from vocational education. Students and

vocational education personnel are often disappointed in one another because they have failed to recognize that choosing an occupation and learning an occupation are inseparable parts of the same process. In the absence of effective vocational planning, Leighbody (1972) found that many young people enroll in vocational education programs for the wrong reasons. Some elect vocational education when a choice is forced upon them at the time they enter high school. These students are required to select courses in the so-called college-bound curriculum, the general curriculum, or the vocational curriculum. Some students have a dislike for school and its required curriculum and believe that vocational education is the way to escape the academic demands. Probably the most common reason for a student's entering vocational education is a determination by teachers and counselors that he or she is not "college material." This gives rise to the too familiar college/non-college-bound syndrome that is accepted by so many educators.

In reviewing professional responsibilities, Leighbody (1972) found that many vocational educators believe that students selected for their individual programs should be chosen on the basis of their "potential for success" in the occupation and that "potential for success" can be determined through the use of aptitude tests, interest inventories, personality traits, and other indicators of general scholastic ability. More recently though, vocational educators have begun to recognize that the process of vocational choice is long and complex and that there are no reliable means for predicting aptitudes or the potential for success in particular occupations.

Questions regarding what motivates an individual toward learning are complex. The desire to learn often springs from the conviction that the

learning will lead to some desired individual goal; therefore, Leighbody (1972) assumed that vocational education can best meet the needs of those students whose career goals are well formulated. A variety of researchers have reported on the nature of vocational choice. Biggers (1971) describes the nature of vocational guidance as the process of helping an individual to understand accurately both himself/herself in the world of work. This process is dynamic and ongoing and assumes that an individual makes a vocational choice through a series of experiences and resultant decisions over a period of years. Effective vocational choice is rooted in the values and goals of the individual with a basic element being the linking of present actions to future goals.

Herr (1972) states that the average youngster is directly exposed to very few occupations. During the socialization process, it is learned that some types of occupations are desirable and others are taboo. Therefore, in attempting to relate self characteristics to various occupations, the typical student has few alternatives through which to sort. In trying to remedy this situation, the schools have developed programs to introduce students to a variety of occupations. This interaction usually takes the form of exposure to some form of occupational information. A variety of possibilities exist for the storage, retrieval, and dissemination of occupational information. Herr recommends the systemizing of occupational information acquisition and delivery so that students can apply the information to their personal characteristics.

During the last decade, career education has attempted to meet the needs of the entire population, since it is a lifelong learning process. The Office of Career Education published this definition of career education (Hoyt, 1976) as "an effort aimed at refocusing American education and the

actions of the broader community in ways that will help individuals acquire and utilize the knowledge, skills, and attitudes necessary for each to make work a meaningful, productive, and satisfying part of his or her way of living." Considerable importance is attached to an individual's self concept, developmental experiences, personal history, and psycho-social environment, all of which are seen as major influences over the process. Career maturity, then, might be summarized as the appropriateness of the individual's responses when confronted with specific career development tasks in comparison to the responses expected of persons at that developmental stage.

London (1973) discusses the two-fold responsibility that school personnel have in recruiting and selecting students for vocational education programs. First, the individual student must be assisted in making vocational choices that help to attain self-fulfillment as well as occupational success and satisfaction. Second, the schools are charged with helping to maintain a balance in society between labor supply and demand so as to make optimum use of human resources. London stresses that effective vocational counseling must include individual interview techniques as well as group counseling procedures. Assistance is needed for a variety of populations: the prospective school dropout, the non-college-bound student, the handicapped student, the college-bound student, the out-of-school youth, and the adult all represent targeted populations that need assistance in selecting and preparing for an occupation.

Another aspect of career education and vocational choice that must be discussed is the barriers that have restricted access to training and, subsequently, employment for many groups of individuals. Several of the critical barriers included are age, sex, artificial entrance requirements,

and school scheduling. The Comptroller General of the United States (1974) strongly suggested that assistance be given to the states and their localities to identify and implement strategies to eliminate or dissipate barriers which inhibit the improvement or expansion of vocational programs and restrict persons from fully participating in such programs.

Similarly, careful examination must be given to the fact that vocational institutions are facing both a shrinking supply of federal dollars and a federally mandated directive via the 1976 Vocational Education Act to demonstrate program effectiveness. As a result, vocational educators are seeking and admitting students into specific programs in which the student will be successful both during the training at the school and after program completion as determined through a graduate follow-up.

Experiences of failure and frustration by students who are unsuccessful in vocational education programs make it incumbent upon vocational counselors and other professional personnel involved in student selection to adopt strategies that will minimize false acceptances and allow for the recycling of students into other, more suitable, vocational education programs.

Recently enacted United States Office of Civil Rights guidelines called for the development of an unbiased system of open choice for all vocational education students. Conflicts inherent in attempts to meet students' needs as mandated in the Office of Civil Rights guidelines, while simultaneously attempting to serve labor market needs, as mandated in the Vocational Education Acts, are most notably manifested in the development of vocational education student selection strategies.

Review of the Literature

Lejeune (1977) investigated the role that public information plays in vocational recruitment and determined the effect of public information variables on vocational school enrollment and utilization. He initially discussed the pros and cons of vocational enrollment but emphasized that the negative image attached to vocational education courses is the single largest deterrent to enrollment. This negative image is fostered by the belief that quality in education is provided by college preparatory courses. Consequently, students enrolled in vocational education courses are viewed as low income and low intelligence groups. The author attempted to determine the effect of public information techniques on vocational enrollment. By identifying effective informational techniques, the study then could aid vocational school recruitment programs. Knowing the techniques to emphasize in an information program enables vocational educators to use their limited time more profitably. The author asserted that public information is a key factor in promoting vocational enrollment in that the use of information techniques does effect vocational enrollment in West Virginia. It was further asserted that there is a difference in the use of information techniques between vocational schools with different enrollments and utilization classifications. Lejeune presented the following hypotheses:

1. There is a difference in the use of public information techniques between high enrollment and low enrollment vocational schools.

2. There is a difference in the use of public information techniques between high utilization and low utilization vocational schools.

3. There is a difference in the use of public information techniques between low utilization/low enrollment and high utilization/high enrollment vocational schools.

4. There is a difference in the use of public information techniques between low utilization/high enrollment and high utilization/low enrollment vocational schools.

5. There are certain public information techniques that contribute more to high utilization and high enrollment than other techniques. (1977, p. 7-8)

Lejeune designed a public information survey that would provide data that can be compared between a representative sample of schools in West Virginia with high and low enrollment and utilization patterns. The survey was administered in four steps: (1) classification and selection of schools, (2) preparation of survey instruments, (3) pilot test of survey instruments, (4) administration of the survey. Tabulation of the survey forms indicated that respondents from the high enrollment and high utilization groups received higher scores on 90% of the public information variables listed on the forms. To determine if the high groups used individual variables significantly more than the low groups, the Wilcoxin Rank-Sum Test, a non-parametric, distribution-free test of significance was applied. The Wilcoxin test assumes that there is no significant difference in the use of public information variables between designated groups.

Lejeune found that school personnel in high enrollment and high utilization schools used more newspaper, radio, and television in their public information programs. Likewise, these school personnel scored higher in the use of in-house media such as newsletters, school newspaper articles, and audio-visual presentations. As far as school relations are concerned, high utilization and high enrollment teachers talk to individual students, home high school classes, and home high school teachers more than the low enrollment and low utilization school personnel. Vocational directors in high enrollment and high enrollment and high utilization schools arranged for vocational teachers and students to address home school students more

often than the low enrollment and low utilization school directors. Students in the high enrollment and high utilization schools indicate that they had more contact with vocational and home high school teachers. In regard to special events, high utilization and high enrollment schools sponsored more career day events than did the low utilization and low enrollment schools. High enrollment and high utilization school personnel make more contacts with various community groups. Teachers and counselors at these schools make more contacts with civic organizations, school board members, and ministers.

Kane and Frazee (1978) conducted a national survey of women in non-traditional, mixed, and traditional occupational training programs at area vocational technical schools to determine the factors which influence women to enter non-traditional training and how they differ from those women who enter traditional training programs. Kane and Frazee found that women have difficulty selecting a non-traditional vocational program in high school, and this is compounded by the difficulty women have in selecting non-academic education within the social context of the school. One cannot deal with female occupational choice between traditional and non-traditional education without considering the role of vocational education within the social system. Teachers and counselors often influence women toward academic goals. Parents, who have themselves attended college, are likely to exercise a major influence on women students, encouraging them into academic pursuits. If a student accepts even a traditional secretarial program, it is tantamount to admitting that she does not have the capacity to do academic work. Young women considering a move into non-traditional vocational areas are often faced with even greater negative pressure.

Kane and Frazee included in their research demographic background to

career choice--including interest, ability, earnings, and counseling techniques. Kane and Frazee report that according to Department of Labor statistics, young people are being unnecessarily channeled into academic programs because of the belief that education is inherently good and is a ticket to success. This is not to say that vocational education is a better answer but that non-sex biased career decision-making models need to be developed. Students must be free to select from among all occupations, academic or vocational, rather than from among those that are considered "high status."

Findings of the Kane and Frazee study indicate that there was considerable agreement among women in non-traditional, mixed, and traditional vocational training as to which counseling techniques are useful and which are not useful to students in their career decision-making. Career education, career orientation, and job site visitations were the counseling techniques that were positively received by all three groups. The response of those who actually participated in these programs was even more positive. Sixty-five percent of all non-traditional women who participated in career education indicated that it was very influential on their career decision-making. Less than 27% of the participants considered individual counseling, vocational testing, or group counseling of value to their career decision-making. Although individual conseling, followed by vocational testing, was available to most women, these techniques were only about half as influential as career education, career orientation, or job-site visits. Although no group held vocational testing in high regard, women's responses indicate that it was more influential on traditional than non-traditional women, which seems to confirm that women students reject vocational testing because of its sex bias. Group counseling was not viewed by students as an

effective technique. Educational personnel did not consider any counseling techniques not useful, and all of them considered individual counseling the more useful. On the other hand, from 25% to more than 75% of non-traditional vocational students found counseling not useful. Both educational personnel and students considered job-site visitation very useful.

When one considers the absence of support for individual counseling as expressed by the students, the positive response of all women students, particularly non-traditional women to career education as well as to career orientation and job-site visitations is an important finding by Kane and Frazee. Career education, career orientation, and job-site visitations each offer a real involvement of the student in the decision-making process. Each experience provides the student with information or actual experience requiring that she draw her own conclusions. Women vocational students were apparently less likely to be influenced by ideas imposed upon them by others.

The researchers conclude that these findings have serious programatic implications. The allocation of guidance funds and personnel time, emphasizing individual counseling and vocational testing, is not only a fiscal waste but an unrecoverable waste of an individual's time and talent, if these techniques are not helping them make appropriate career decisions. Inappropriate career decision-making models increase the number of women who must return to school later in their adult life when they finally make a satisfactory career decision, and it reduces even further the school's ability to assist students in a smooth transition to work.

In his study of factors that effect student enrollment and scheduling in vocational schools in West Virginia, Jacobs (1975) used questionnaires

for both students and parents to determine the reason students perceived as influencing their choice of curriculum. The questionnaire that was directed to the students focused primarily on three general areas: possible influences on the choice of a course of study, consideration of vocational education by non-vocational students, and attitudes toward vocational education. The parent questionnaire emphasized these same areas but from the perspective of the parent. Overall, there was considerable agreement in the responses received from students and parents.

In analyzing the results of the questionnaire, Jacobs found that:

1. Non-vocational students usually had as much or more exposure than vocational students to experiences designed to increase their occupational knowledge and awareness.

2. Relatively few students, usually 10% or less, reported they were prevented from taking vocational courses by rules, regulations, or discussions with teachers and counselors.

3. Increasing the number of vocational offerings, particularly in the popular areas such as auto related and building trades, would increase the attractiveness of vocational programs to many students.

4. Attitudes toward vocational education are generally positive among both vocational and non-vocational students and parents. The vocational students and parents, however, are usually significantly more positive than the non-vocational students and parents. (1975, p. 4-1, 4-2)

Lindsey (1980), in his study of factors that influence student enrollment in area vocational technical schools in Tennessee found that the greatest source of influence for attending this type of vocational school for the group he was studying was "no special person." Apparently, teachers and counselors are of little influence. According to the responses given in the questionnaire, friends had more influence than counselor/teacher or parents.

Lewis (1976), in his study of non-traditional vocational education programs for women, found that less than half of the students rated the programs or activities which the schools conducted as quite or very helpful in introducing them to different courses of study offered. As for courses about careers, less than half of the students in the sample had been exposed to one career course. The students were asked also to indicate all of those people who suggested that they take the course of study they were following as well as the one person who had the most influence on their choice. At least 50% of the respondents indicated that no one suggested they take the vocational program in which they were enrolled, and less than one quarter indicated having received the suggestion from their guidance counselors. The most frequent source of suggestions about the programs was parents. This could possibly indicate the need to educate parents to the variety of vocational options which should be available to their children. For approximately half of the students, their own perceptions and desires play the major role in their course selection. This was most dramatically the case for non-traditional females leading the researcher to support the frequently stated notion that females are not informed about or encouraged to enter non-traditional fields. Lewis also evaluated the counselor's performance in expanding career opportunities for young women through interviews. In response to the question, "What do you consider personally to be the main responsibilities of the counselor?", only 25% of the counselors mentioned vocational or occupational counseling as one of the counselor's major responsibilities. Counselors were asked also how active a role they play in recruiting students into non-traditional areas. Over half indicated that they encourage students to take non-traditional programs and very few indicated that they ever discourage the same. Yet

it appeared in the findings that counselors offer encouragement only if the student first indicates a non-traditional interest and then, by their own admissions, they probe to be sure that the student is "really serious" and has "thought it through" and is not suggesting such a vocation for its "shock value."

Lewis theorizes that another reason counselors do not do more counseling towards non-traditional programs may be that counselors' personal biases and attitudes toward women's changing roles in society influence their professional advice. Lewis, after seemingly becoming quite annoyed with the responses of many of the counselors, recommended that people who want to see vocational stereotyping eliminated, thereby broadening occupational opportunities for women and men, might be advised to educate counselors with facts and figures rather than relying on abstract arguments concerning the justice of equality for women and the inequity of keeping women in low-paying, low-skilled jobs.

> While such arguments are often presented using such words as "self-esteem" or "fulfillment"--terms familiar to counselors steeped in psychology courses in college--a more productive approach to educating high school counselors to work against sex role stereotyping may be one based on economics. Counselors might be most influenced by the information which indicates that nine out of ten of today's high school women will work outside the home on an average of 20 to 25 years; that 50% of the women who now work do so of economic necessity; that there will not be enough "female" jobs in ten years for all the women who will have to work; and that there are not now enough males to fill traditional male jobs. (Lewis, 1976, p. 162)

In a study commissioned by the Vermont State Department of Education, Division of Vocational-Technical Education (1979), into Equalizing Access to Vocational Centers, it was found that the Vermont vocational schools used many methods to assist students to acquire an understanding of their own interests and aptitudes and how these interests and aptitudes can help them choose appropriate training courses to prepare them for the world of

work. Among the activities included in this area are reading occupational materials, vocational aptitude tests, vocational interest test, career education courses, and a summer program. All of the influences on vocational choice were reported by students themselves on a self-report form. With the exception of career education, the researchers found no definite association with any of the influences in choosing a vocational program.

In the area of career education, though, the researchers drew three conclusions as to why career education was chosen to a greater degree over all other influences. One is the causal explanation, since taking a career education course preceded the choice of a vocational program, the course caused the choice. A second explanation is that students who are in vocational programs are more oriented to the world of work and, consequently, more likely to recall taking a career education course. A third explanation is that there are totally separate factors such as the socio-economic status of the families that cause students to take a career education course and to choose vocational programs.

With respect to access to vocational programs, it was found in the Vermont study that a large proportion of potential vocational students are not being prevented from choosing vocational programs by bureaucratic arrangements or discouraging attitudes. The primary reasons non-vocational students do not take vocational programs are personal and relate mainly to their plans for post-secondary education. If real changes are to be made, they will consist of changing the emphasis on college as the most appropriate goal for young people. Among the conclusions reached in this study, the group found that the better the recruitment activities in the sending schools, the better the potential for obtaining students in the vocational schools who are knowledgeable about the vocational programs. It seems that the

more positive attitude the student has toward the vocational program, the more apt she or he will be to select a vocational program. Tours and visits to the center seem to be the most popular ways to acquaint the students with what the center offers, followed by slide presentations and career assemblies, but there did not seem to be a definite recruitment policy that prevailed throughout the state. One of the areas that was highly successful was that centers conducted open houses and parents' night to acquaint students and parents about what is offered at the vocational centers.

The professional staff in Vermont made it clear that they believe there are three approaches toward better recruitment: getting more individuals and parents involved in the Center, more hands-on experience or career awareness and exploration, and more student exposure to the center. Even though these activities are being conducted by the vocational personnel, the professional staff feels that these are three areas that have to be increased to a high degree if recruitment and good career decision making by students is to be effective. It was also found that there should be more public relations activity and better communication between the staff at the home high schools and the vocational center. With respect to career education, the investigators concluded that the schools have initiated attempts to relate career education (career awareness and career exploration) to the students.

Another specific target population that should be studied extensively is the Hispanic population. Funding is available for the development of vocational programs for the recruitment of minority students, especially the Hispanic students. A very crucial part of the total problem involves appropriate placement of the Hispanic students and retention of those

Hispanic students in the various specific vocational programs. For example, in a study conducted by the Minnesota Department of Education on Bilingual Vocational Training, it was observed and reported by persons involved in minority recruitment that Hispanic persons placed into area vocational technical institutes exhibit some very basic problems. Hispanics are generally apprehensive about their ability to succeed in the program, and they are uncertain about their own vocational goals. Usually they are unable to identify occupational areas other than those in which their immediate families are employed. With their limited math and reading skills, most function between the second and seventh grade level. The accessibility of vocational programs has been restrictive to Hispanic youth mainly because of their math and reading ability and their lack of transportation to and from the vocational centers. This project included a preparatory program for entering students designed to maximize access to all vocational programs and to ensure that entering Hispanic students make sound vocational choices. This program was designed to acquaint the student with a wide range of career choices available within the vocational technical center, and also to make the student aware of the skills needed to pursue various types of training. During the preparatory program, the students devoted approximately half their time to basic skill-building in the area of mathematics and communications and the other half of the time in vocational observation, exploration, and analysis. Such a program ensured exposure to a wide range of careers and encouraged a student to consider new and non-traditional occupations.

Summary

The results of this review of the literature provide no clear-cut formula that vocational educators can adopt that will provide appropriate career education strategies for their students. In fact, some vocational educators may be disappointed after reading this review if they expected definite conclusions. Many studies were reviewed dealing with enrollment and follow-up of vocational students, but very few research studies were uncovered that studied the impact of career education on occupational choice.

Public information strategies relating career awareness and career exploration programs in the home school to enrollment in vocational programs seemed to be the least difficult area to conduct research studies. Conclusions reached in these studies indicated that both commercial and in-house publications (newspaper, newsletter), and audio-visual presentations ("home made," radio, television) are almost universally used but not all to the same extent. Teachers and counselors visiting home schools and meeting with students seemed to have a significant influence among students who enroll in a vocational program. Career Day and open-house activities were found to be important especially to inform parents and the public-at-large about vocational programs. It was found that the more public information strategies used by vocational districts, the more successful the district tends to be in fulfilling their enrollment needs.

It was also found that non-vocational students were more likely to have been exposed to or enrolled in career education activities (courses) than vocational students but that participation in or exposure to career education programs (vocational and non-vocational) seemed to have an impact on vocational choice.

Several studies concluded that school counselors had little influence on the occupational choice of their students. When counselors themselves were asked to report on what they considered the main responsibility of the counselor to be, only 25% included vocational or occupational counseling. The findings also seem to indicate that counselors do not "go out of their way" to recruit students into non-traditional programs. Females who enter non-traditional vocational training programs rate career education activities, career orientation programs, and job-site visitations as being very significant to them when faced with making an occupational choice. They rate individual counseling and counselor influence very low with regard to vocational choice.

Career awareness and career exploration activities for the enrollment into vocational programs of target populations (Blacks, Hispanics, and the handicapped) apparently are not very widespread since there were very few studies uncovered by this computer search. These target populations all have their own set of general problems that must be faced in addition to the problems of the so-called normal population. If vocational educators meet the Federal mandate of equal access and provide vocational education in the least restrictive environment for the handicapped, then research should be conducted and strategies developed to provide these students with appropriate career decision-making techniques.

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SUCCESS IN AMERICA:
SOCIAL AND PERSONAL PERSPECTIVES

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Introduction

What is success? There have been many answers, as social and economic conditions, religious beliefs, and philosophies have changed with time, and there are still many answers today because of difference in our subcultures. Vocational and career education, like professional education, tend to have occupational definitions of success, whether implicit or explicit; liberal and humanistic education often have other types of definitions although they have been less inclined to operationalize these in the form of measurable criteria and with them to evaluate the effectiveness of their programs. The Character Education Study (Hartshorne & May, 1928), and the Eight Year Study of Progressive Education (Aiken, 1942) are outstanding exceptions--and they turned up more problems than they solved!

Social Perspectives

Ancient Greece viewed work as a curse, something fit only for slaves while free men and women pursued the arts, the sciences, letters and athletics. That Socrates taught classes and that Plato, Aristotle, and Aristophanes wrote books and plays, does not seem to have qualified them as workers: they were doing what they wished to do, for purposes other than earning a living. Success was substantive rather than material.

Martin Luther and the early Protestants, outdone in some ways by the New England Puritans, considered work man's salvation, a way of self-redemption and especially of keeping out of trouble. Wealth showed

dedication and virtue.

Various tribes of primitive peoples have produced their own definitions. The Zuni, in our Southwest, provided collective security in such a way that self-aggrandizement was not a private objective, while the Kwakiutl in our Northwest fostered competition, self-aggrandizement, and the accumulation of property if only for the purpose of destroying it to show that one could do so.

In contemporary America one observes conflicting values, but it is a commonplace that people are judged by their jobs on the basis of the likely income and responsibility, by their visible wealth as seen in their homes, cars, cabin cruisers, and other material possessions, and prestige of the education which they have been able to acquire through a combination of ability to learn and ability to pay. And yet, some people who could enter financially rewarding occupations choose fields that offer less in the way of earnings, and some who acquire wealth do not consider themselves truly successful. They are America's minority, who do not value wealth, status, and power.

Personal Perspectives

Thus individual views of life goals and of success in attaining them need to be taken into account, even within one society and within one sub-culture.

Social norms are internalized to a degreee that varies from person to person, some being greatly influenced by their families to accept their objectives, others rebelling against or rejecting family values and taking on those of others such as peer groups in school, in college, or at work. Thus it has been shown that some sons of blue-collar workers, in the same neighborhoods and going to the same schools, aspire to skilled jobs and

seek vocational training, while others with the same background reject such goals and such training and seek semiskilled jobs in which they can enjoy the companionship of their peers both at work and at leisure (Willis, 1977). In The Adolescent Society Coleman (1961) has shown that the social climate of a school tends to produce students who define school success in academic, in athletic, or in social terms, depending upon which set of values dominates the school in question.

Personal norms also play a part, as evidenced by the child who rejects parental values and definitions of success not for peer values, at least at first, but because of his own inner drive to be a certain kind of person and because of his own self-concept. Thus both George Kelly (1955) and Robert White (1952) have developed theories of personality which stress the selective and integrative needs and capacities of individuals, needs and capacities which seem to differ in important ways from and to produce personalities and definitions of success which differ from the social familial or social norm. For these people, success is something intrinsic, it is need satisfaction rather than something extrinsic such as wealth or status.

This paper examines both social and personal definitions and criteria of success in some concrete detail, with examples of their use in studies of occupational and career success. It includes as selective exhibits some criterion measures that have been used with success in follow-up and evaluation studies.

Socioeconomic Criteria and Measures

Cross-Occupation Level

Success in the United States is (rightly or wrongly) judged primarily in terms of the social status attained by the individual. The "successful person" is one with wealth, power, and high socioeconomic status.

Earnings. Although opportunities to earn vary greatly from one occupation to another, and with the career stage in which a person finds him or her self, earned income has in some studies of heterogeneous occupational groups been used as an index of occupational success.

It is hardly necessary to document the first defect of such criteria, although there is a logic behind its use: one might argue that the ablest people gravitate toward the best-paying occupations, and therefore success in the world of work might be judged by earnings. But this assumption is subject to too many exceptions, such as lack of access to better paying jobs reserved by tradition or bias or monopoly, to certain categories of people, lack of access because of the expense of training or of moving to an area in which those occupations are open.

The career stage at which people find themselves also undermines the adequacy of this criterion, for semi-skilled workers often earn more than skilled workers early in their working careers because of apprenticeship practices, and beginning teachers and nurses often make less than assembly-line workers, police officers, and other less expensively and less highly trained workers, in their early working years, this true even though the more highly trained people generally make more at the peak of their careers and in their pre-retirement years as well as in retirement and thus have higher life earnings.

An example of the use of such a criterion, and of its defects, is the

senior Thorndike's (1931) study of the prediction of vocational success. Here earnings were the criterion used, with the disappointing result that the tests used to predict success did not in fact do so. But instead of the tests being defective, the legitimate conclusion was that the criterion was not a good one: the subjects were 23 years old, on the average, which meant that the earnings of workers who had been in the labor market for several years as semi-skilled and skilled workers were being compared with those of workers who had just entered the labor force after completing college or university training. Other studies, using more appropriate criteria, have shown that such tests do have predictive validity for intra-occupational success (Flanagan et al., 1973; Thorndike & Hagen, 1959).

A more refined approach to the use of earnings, and of other possible objective measure of occupational success, has involved the establishment of occupational level scales. These are discussed below.

With a few exceptions (such as inherited wealth or high political office) the crucial variable in achieving success in the United States is membership in a given occupation. For most of us, our occupational role provides us not only with a degree of social status but in many cases it is the major source of income and power over others.

Status. Over the years, sociologists and vocational psychologists have studied relationships between occupation and socioeconomic status. The two most widely used classifications over the years have been the one developed by Alba Edwards for the U.S. Bureau of the Census and the Warner-Meeker-Eells Scale. Edwards' classification system (1940) provided eleven groups to which all occupations could be assigned, as follows:

V - Professional and semi-professional worker

O - Farmer or farm manager

1 - Proprietors, managers and officials, except farm

2 - Clerical, sales and kindred workers

3 - Craftsmen, foremen and kindred workers

4 - Operative and kindred workers

5 - Domestic service workers

6 - Protective service workers

7 - Service workers, except domestic and protective

8 - Farm laborers and foremen

9 - Laborers, except farm

Although this system provided a rough indication of socioeconomic status (since it was based on social prestige, earnings, and education) it had been developed primarily for classification and counting purposes, not scaling.

In an attempt to develop a scale for rating social status level on the basis of occupational membership, Warner and his associates (1949) at the University of Chicago in the late 1940's developed a revised scale which was based on the two basic variables of Prestige and Skill but which also recognized the fact that there were several hierarchies depending on the field. Hamburger (CPS, 1971) updated and refined the scoring system in a widely used revision. Exhibit A presents Warner's classification system. Except for the dollar amounts designated for size of businesses, the classification scheme is fairly applicable even today.

In refining their social status scale, Warner and his associates found that occupation was so highly correlated with education and prestige that social status could be accurately measured by determining the occupational status plus taking into account source (not amount) of income and type of location of dwelling. Even this composite measure

predicted social status only slightly more accurately than did occupational status alone. It is clear that, whether we like it or not, status in our American society is highly reflected in, if not determined by, occupational membership, which in turn is influenced by parental status, aptitudes, and education.

Let us look separately at some of the characteristics on which occupations can be differentiated and scaled.

Educational requirements. The Bureau of Labor Statistics has for many years published data on the educational requirements of the major occupations in the American occupational structure. The periodically revised Occupational Outlook Handbook (Bureau of Labor Statistics) describes, among other things, the educational level of thousands of occupations.

A convenient source, kept current by periodically revised editions is a series of monographs published by the Bureau of Labor Statistics of the U.S. Department of Labor, which lists and describes several hundred representative occupations grouped according to education level--from "Job in which a high school education is preferred but not essential" to "job for which a college education is usually required." As might be expected, the occupations in the top category are primarily those classified as Levels 1 and 2 in the Warner Scale, while those not requiring a high school education are in Levels 5, 6, and 7.

We should be aware, of course, that some occupations require considerable on-the-job training even though a relatively low level of formal education is required. The Department of Labor recognizes this by rating each occupation on two scales: (1) General Educational Development and (2) Specific Vocational Preparation (U.S. Department of Labor, 1965). An architect, for example, would require post-college training and 4 to 10

years of specific vocational training while a Bill Complaints Investigator would also require 4 to 10 years of specific vocational preparation but only high school plus two years of technical training.

Occupations can also be classified in terms of intellectual and ability requirements. Again we can go to the U.S. Department of Labor (1977) for a comprehensive scaling of occupations, which has been built into the code number assigned to each occupation. The middle three digits in the nine-digit code number describe the level of difficulty or complexity of involvement with three basic work functions, namely, Data, People, and Things.

Using the same examples as above, Architect is coded as 061, meaning the highest level of working with Data (termed synthesizing), level 6 for working with people (described as exchanging information with others) and level 1 for Things (described as precision working). The Bill Complaints Investigator, on the other hand, would require only Data Level 2 (described as analyzing), People Level 6 (described as exchanging information) and, Things Level 7 (described merely handling objects or equipment).

Extensive data have been obtained concerning the levels of intelligence and special atitutes possessed by representatives of various occupations. (Note: The classifications referred to above were derived from ratings by experts of what they thought the occupation would require.) Chief among these studies were data from classification levels in World War I and World War II (Stewart, 1947) and in career follow-up studies by Thorndike and Hagen (1959) of Air Force cadets and by the American Instiitute for Research (Flanagan et al., 1973) of a large representative sample of American youth tested, while they were in high school.

These studies, plus other studies of small or restricted groups, confirm the conclusion that when occupations are ranked by variables such as

intellectual level or educational requirements they tend to group themselves much the same as in the socioeconomic groupings, as exemplified by the Warner Scale.

Prestige. The ranking of occupations which is most relevant to success, at least as perceived externally, is the level of prestige associated with membership in the occupation. The evidence shows that we tend to look up to certain occupations and down on others. The goal (sometimes unrealistic) of most individuals is to rise in the occupational world and parents, particularly in the lower and middle class, expect, or at least hope, that their children will end up at a higher level on the socioeconomic scale than that which they have reached.

One of the striking findings about the prestige levels of occupations are their remarkable stability over time. Comparison of an early study by Counts in 1925 and a replication of the study in 1947 by Deeg and Patterson yielded a correlation of .97 between the two rank orders. A comparative study, by Hakel, Hollman, and Dunnette (1968), found a correlation of .93 between the 1947 and 1967 study rankings. In 1947 the National Opinion Research Center obtained prestige rankings of a sample 90 occupations and in 1963 replicated the study (Hodge et al., 1964) and found a correlation of .99 between the two sets of rankings. This stability survived a succession of critical periods in our history: the depression of the 30's, World War II, the rise in educational level of the population in the 50's and 60's, and the technological advances in all the sciences during the 50's and 60's. Sample rankings for the 1963 study are as follows:

Occupation	Rank Order
U.S. Supreme Court Justice	1
Physician	2
College Professor	8

Minister	17.5
Banker	24.5
Building Contractor	31.5
Trained Machinist	41.5
Mail Carrier	57
Plumber	59
Store Clerk	70
Coal Miner	77.5
Garbage Collector	88
Shoe Shiner	90

It is obvious, from the above sample, that the prestige levels resemble the socioeconomic status, the educational levels, and the intellectual levels of those occupations.

Industry. A possible related variable is the industry within which the job lies. This has been studied less intensively but one study (Tatro & Garbin, 1973) obtained prestige ratings on 30 industries and found that they fell into at least clusters, exemplified by the following:

Top 5:	Atomic energy plants	Commercial airlines
	Medical services	Colleges & universities
	Research laboratories	
Middle 11:	Motion pictures	Federal government
	Publishing companies	Telephone companies
	Electric power & light	Rubber products manufacturing
	Petroleum refining	
	Automobile manufacturing	Weapons manufacturing
	Building construction	Ship & boat building
Bottom 5:	Hotels	Meat packing
	Tobacco companies	Coal mining
	Farming	

It is interesting that the factors reported as particularly significant for prestige level were perceived income, skill, educational requirements, and the relative power of the industry. These are quite similar to the

factors considered as determinants of the prestige level of occupations.

Multidimensional system. Finally, a useful occupational classification system by which one can locate a given occupation within our American occupational structure, is the multi-dimensional system developed by Super (1957). It is based on three dimensions: (1) level, (2) field, and (3) enterprise. Level and field are adapted from the Roe classification and Enterprise is based on the Standard Industrial Classification system of the Census. Exhibit B presents the categories of the three dimensions.

A given occupation can be placed somewhere within this cube, which represents an occupational structure. Success (viewed externally) is then a function of the level of one's occupation in a given field (a la Warner) and in a given enterprise (a la Tatro and Garbin).

Ratings of success by family members have occasionally been considered as evidence of occupational success, on the grounds that parental approval of a young person's job, and the spouse's approval of a mate's occupation and job, are basic to personal and to familial happiness. This is thus basically a satisfaction measure, but occupational level can be used as the status judged, as when parents want a child to become a physician and are disappointed when he or she goes into pharmacy or business, and when a wife wants her husband to be a corporation manager instead of a small storekeeper. Such criteria have rarely been used in studies of occupational success, because they have appeared more appropriate for studying family influences than for evaluating success.

Within Occupation Levels

In using occupational level as an index of success, it has generally seemed more appropriate to consider success within the occupation entered than to compare people in differing occupations. Thus differences in

opportunity are reduced, although regional differences, family contacts and resources, and other such variables still vitiate the criterion unless they are in some way controlled or partialled out.

Employers' ratings have been one of the most commonly used criteria, the logic being that supervisors know best how well a person is handling his or her occupation and job, and that the individual's earnings and promotions depend upon employer judgment (Schultz, 1973, p. 185ff). Thus in the Career Pattern Study begun at Teachers College in 1951 we asked each employer of our junior high school boys followed up when they were 25 years old (Super & Jordaan, in process) to rate them for job success. Employers rated each CPS subject employed by them during the preceding five years on a five-point scale of satisfactoriness, and answered a question about whether they would promote or re-hire if no longer employed there. The data were collected by experienced interviewers, either in person or by phone, with proper credentials assuring confidentiality. It developed, however, that so many subjects were rated "satisfactory", and even rehirable, that the criterion was unusable and was dropped. This kind of defect, known as that of central tendency, has been found to be quite common.

It and another kind of defect, known as halo, and a third, known as constant error, can be minimized and even corrected by proper training of raters and by the statistical treatment of data from regular raters so as to make fair comparisons possible. But these tendencies to be influenced by some one characteristic or event (halo) or to be an easy or a severe judge (constant error) cannot be allowed for when one is following up, let us say, a whole class of graduates working in a number of places from each of which only a few ratings are obtained in a given year.

When ratings by employers are used, it is important to make them deal

with concrete behaviors rather than with abstract traits. Thus a rating of the trait "industriousness" is not likely to differentiate workers as well as a rating of "consistency in meeting standards", and this in turn is not as likely to prove as valid and reliable a rating as one that calls for ratings of "getting work done on schedule," "production meets quality control standards." Exhibit C in the Appendix provides a relevant sample supervisory rating.

Peer ratings were experimented with in World War II, and have been used some in higher education. It has been found, however, that they work best when peers are not in competition with each other. One might thus ask the members of a group of graduates who have been in the labor force for some time and work in the same community to rate each other, but the procedure would probably be made invalid by insufficient knowledge of each other's performance with the result that halo effect would dominate ratings.

Experts' ratings have also been used in limited situations. Thus in middle and especially top management jobs a personnel manager or specialist, or an industrial psychologist from within or without the company, may interview the executive's manager, and perhaps collect data from peers and from himself, in making an assessment and in completing ratings (Schultz, 1973, p. 199ff). Thus too, in the Career Pattern Study, expert staff members studied case folders, using carefully devised methods for rating a variety of traits and behaviors relevant to career (as contrasted with occupational or job) success: these are discussed in a later section. In most follow-up studies it is, of course, impractical to have experts interview supervisors or fellow workers. They may, as in CPS, rate on the basis of questionnaires completed by subjects and even by employers when comprehensive data can be collected--again, an exceptional circumstance.

Earnings often can be used as a success criterion under certain circumstances when studying the success of people trained in and working in the same occupation. Two desirable conditions are that they be working in the same geographic area and be graduates of the same or at least contiguous classes, so that economic opportunity and access can be held constant. If the subject are working for piece-rate wages, so that production enters into earnings, performance on the job affects the measure (assuming anti-rate-busting practices are not rampant). When wages are a function of seniority or of overtime, corrections can sometimes be made to permit comparisons, but the needed data may be difficult to obtain. Thorndike and Hagen (1959, pp. 43-50) used earnings as a criterion in their longitudinal study of 10,000 adult men, tested when about 21 years old and followed up when about 34 years old, and found that, although reported earnings seemed to be the best obtainable criterion of success within the same occupation, neither aptitude nor biographical data predicted earnings. Aptitudes and personality did differentiate men in one occupation from men in others, i.e., the test battery did have predictive validity, but it was valid for forecasting what they would do and continue to do, not for predicting how well they would do in the field which they entered. Thorndike and Hagen note the logical as well as the empirical defects of their criterion problem in this well-funded and well-executed study worth quoting:

"The problem of evaluating occupational success for a population such as ours is an extraordinarily difficult one. The men were scattered over the whole country. It was a rarity to find two men working in the same company. The nearest we came to it was a group of telephone installers, most of them worked for the affiliated companies of the American Telephone and Telegraph Company. Even here, however, the men were spread over many

different affiliates, widely scattered geographically. With the men so distributed, there is no fully satisfactory basis for comparison. Pay scales vary from company to company and from region to region. It is not possible to obtain production records or any other objective indication of job performance that could be compared for the men in the group. There is no common basis for rating performance, even if it were administratively feasible to get such ratings. Our estimates of the success of different men in a group are therefore admittedly imperfect and fragile" (Thorndike & Hagen, 1959, p. 17).

Fortunately, in vocational and technical education our follow-up studies are generally of young people in the same class, in the same community, graduating in the same year. Fortunately, too, we generally have working relations with our local employers, and can thus have made available ratings and even production data, perhaps even work with them, if need be, to improved upon the quality, or the relevance for our purposes, of the ratings.

For what kind of earnings data should one ask, given the above better research situation? Thorndike and Hagen used monthly earned income, but do not report whether they asked for average monthly earning for the year just elapsed, for the current month's earnings, or for data on some other time period. Current monthly data are too subject to temporary swings up or down, leading one to favor averages for a longer period such as a quarter or preferably a year. In the Career Pattern Study (1963) we asked:

> "Before taxes and deductions, about how much did you generally make on this job? Put an 'S' by your starting salary, and an 'F' by your finishing salary.
>
> _____$44 or below
> _____$45 to $54"
> etc., etc.

The numbers used were those deemed appropriate for the labor market and for people in their mid-twenties at that time. In both of the studies cited the great majority of people supplied the desired information, helped by the reputations of the institutions conducting the studies and, at least in the CPS, by the ease with which the question could be answered. It should be noted that a second question, open-ended, asked for data on other types of compensation such as tips, room and board.

Ability Matching

Here the criterion is not, as in an earlier section, the level of ability required by the occupation, but the goodness of the match of the individual's abilities with the requirements of his occupation. The method is familiar to many through the U.S. Employment Service's General Aptitude Test Battery (U.S. Employment Service, 1970), which makes possible the comparison of the test profile of an individual with the test profiles typical of people in a variety of occupations. Thus if a school has GATB scores for members of a class being followed up, a questionnaire can supply the data for occupational classification, and profiles can be matched by hand or by statistical methods. The former method requires establishing rules for matching by eye and training judges; the latter requires good statistical and computer consultation.

Few studies of this type have been made, perhaps because of the expense of judging, perhaps because the statistical methods have become available only fairly recently along with computer programs. In the small-scale, well-funded Career Pattern Study, we were able to train judges and used that method because we lacked occupational profiles for the battery of tests we had put together in 1951. We used changes in the goodness of the occupational fit over time as one criterion, discussed later as a career criterion.

As a criterion, goodness of fit of aptitude and interests can be acceptable, if good judges or good profile data of the type that the GATB (USES, 1970), the Career Data Book (Flanagan et al., 1973), and Ghiselli (1966) have made available are used, but not as criteria of the success of a vocational training program. For what such a measure reflects is the ability of individuals in certain circumstances to find their way into and keep positions in a field of work, and perhaps the effectiveness of the guidance program that helps them choose a training program and to seek employment not the adequacy of education in preparing them for that occupation.

Career Progress and Stability (Career Success)

The term "career" is often used as a synonym for "occupation" although in much of the more scientific and professional writing in psychology and sociology, and in their origins, the words have distinctly different meanings (Super et al., 1957, p. 131; 1976, p. 13). An occupation is, literally, that with which a person is occupied, generally, but not always, that with which he or she is occupied in earning a living. It may denote the specific position, job, or field of work (occupation), although it has long been pointed out (Shartle, 1946, pp. 25-26) that each of these three terms has a precise meaning which should be preserved. Career, on the other hand, denotes a course, a road, a highway in its early usage, and has come to mean the course of life, generally the course of occupational life, but sometimes that of marriage or other life roles as in "marital career." The career of any given person may therefore consist of several different occupations pursued in sequence or simultaneously in moonlighting, and of several different jobs and positions in any one or more of the occupations pursued.

A career criterion is thus a criterion which takes into account the movement of individuals from one position to another, be it in the same

occupation or in a different occupation. It even includes movement from school or college to work, as in the commonly used follow-up criterion of placement in the field of work for which trained or, better still, the rarely used criterion of realism of reasons for making position, job, and occupational changes as the career sociologists had been interested in careers since at least the 1930's (Davidson & Anderson, 1937; Miller & Form, 1951), but educators and psychologists had paid little attention to them as such. It was the Career Pattern Study that first sought to the sequences of educational and occupational positions occupied by people over a period of time in the light of the personal characteristics, psychological as well as social, of the individuals in question. In doing so, a number of novel, as well as standard, determinants and criteria of career success were used. Not all of these are of interest to us here, for some proved inadequate and need merely be mentioned and dismissed. Table 1 shows the 29 success criteria tried out in the Career Pattern Study, as reported in the pending monograph on the follow-up at age 25 (Suger & Jordaan, in process for 1983).

Table 1
Criteria of Success Tried Out in CPS

I. Career Coping Behaviors
   - A. Floundering
   - +B. Stabilizing (includes Trial, Instrumental, and Establishment) Scored dichotomously.

II. Scaled Career Behaviors
   - +A. Equity Change
   - +B. Realism in Moving
   - C. Goodness of Fit: Abilities
   - D. Goodness of Fit: Interests
   - E. Progress Toward Goal
   - +F. Status Improvement: Occupational
   - G. Status Improvement: Educational
   - H. Career Development Total (sum of A, B, E, F, and G)

III. Career Behaviors and Outcomes
   - A. Employment History
     - +1. Number of Moves
     - 2. Number of Times Unemployed
     - 3. Number of Months Unemployed
     - 4. Number of Months Self-Supporting

B. Educational Attainment
   +1. Level Attained
   +2. Improvement over Father's Level
   3. College Grade-Point Average (when available)
C. Career Criteria
   +1. Career Satisfaction, Self-Estimated
   +2. Career Success, Self-Estimated
   +3. Career Establishment, Self-Reported
   +4. Attainment of School-Leaving Occupational Goal

IV. Occupational Behaviors and Outcomes
+A. Occupational Level Attained
+B. Position Satisfaction, Self-Estimated
C. Occupational Satisfaction, Continuity
+D. Occupational Satisfaction, Self-Reported
+E. Position Satisfaction, Self-Estimated
F. Position Success, Self-Estimated
G. Position Success, Employer-Rated
+H. Occupational Success, Self-Estimated
+I. Utilization of Assets, Self-Reported
+J. Opportunity for Self-Expression, Self-Reported

Note: A + indicates criteria which showed evidence of construct validity by significantly correlating with other appropriate criteria and by their factor loadings.

The first three categories deal with what were, on logical grounds, considered to be career criteria, while the last category were considered occupational. A factor analysis of the criteria which showed construct validity through their common elements yielded the following categories:

Table 2
Construct-Valid Criteria of Success,
Grouped According to Factor Loadings

Occupational Factors: Criteria	Attained Status	Job Satisfaction
Educational Level	.83	
Occupational Level	.59	
Occupat'l Satisfaction, Self-Est.		.69
Position Satisfaction, Self-Est.		.68
Opportunity for Self-Expression		.80
Final Stabilizing Status: Coping Behavior		.37

Career Factors:	Career Progress
Attainment - School Goal	.45
Career Success, Self-Est.	.38
Number of Moves (Job)	-.49
Change in Equity	.70
Realism in Moving	.54

Career Factors:	Career Satisfaction	Occupat'l Advancement
Career Establishment, Self-Est.	.91	
Career Satisfaction, Self-Est.	.81	
Utilization of Assets	.68	
Final Stabilizing Status	.38	
Occupational Level		.19
Change in Equity		.25
Improvement in Own Occ'l Level		.65
Improvement over Father's Occ'l Level		.49

It is noteworthy that only one career criterion (Educational Level Attained) in the a priori classification appears, empirically, to be actually an occupational index, and that two criteria at first considered career indices (Occupational Level Attained and Utilization of Assets) now appear to be actually occupational criteria. There are, here, a few logical incongruities which can be resolved only by further research; here it hardly seems pertinent to dwell on them. It is pertinent to note here that, in data source and method of treatment to be considered operationally independent.

A few comments on the criteria which appear to lack construct validity do seem called for.

The two Goodness of Fit measures were disappointing, for occupational ability profiles have been well established. But CPS scores on such tests made when in high school and used to assess changes in the goodness of fit in from first school-leaving occupation to occupation-at-about-age-25 showed no improvement. It had been hypothesized that, given the inexperience and lack of specific vocational training of most of our subjects, there would be little correspondence between abilities required and abilities possessed, between interests typical of people in the field of employment and interests characterizing the subject, but that seven years of experience in the case of high-school graduates and three years of experience on the part of college graduates would result in the kind of occupational sorting process that

Project Talent (Flanagan & Cooley, 1966) observed during the high-school years, using occupational objectives as the criterion. But this sorting process did not take place during the early years of the working lives of our young men, at least, not on the basis of measured abilities and interests.

What was wrong? The hypothesis? The tests? The labor market in southern New York State in 1963? Perhaps the sorting process has only begun at the time at which young men are 25 years old. Supporting this idea is the fact that in many interviews at age 25 our men showed evidence of just having begun to wake up to the fact that they were not employed in satisfying occupations and that they needed to make special efforts to find and establish themselves in more suitable work. If the only thing wrong with this study is that this analysis was made too soon in the men's careers, the implication would appear to be that follow-up studies of career success, and of occupational success, should not stop at age 25, and certainly not at age 21. We have carried on the CPS follow-ups to the age of 36 (Kleinberg, 1975); those analyses, now in process, will perhaps throw some light on this question. In the meantime, the age explanation impresses us as the best--a discouraging one, if true, because it means that shorter-term follow-up studies can tell only part of the story. We may perhaps take comfort in the hypothesis that students exposed to career education, and especially those obtaining vocational training, may mature vocationally more rapidly than those pursuing general and academic education as did most of the CPS boys, many of whom floundered for some time after leaving school or college, 25 percent of whom were still floundering at age 25.

Career coping behaviors. Establishment, in the broadest sense of that word used to denote a process that may or may not be taking place, includes behaviors that range from floundering almost aimlessly from one major course

of study or job to another, through stagnating in one program or job when a change is called for and trial and stabilizing and even maintaining oneself in a field of work. These behaviors were judged by experts, using interview and questionnaire data collected for this purpose. As this is a time-consuming and expensive type of assessment, it is not considered further here, and is mentioned only to illustrate a global type of success criterion which is conceptually and empirically very satisfying.

Progress Toward Goals is another dynamic criterion of success, or would be were it not that occupational goals during the post-high-school years are so changeable that the measure is meaningless for most youths.

The Number of Moves made after leaving school, having a negative loading on the Career Progress Factor, is interesting because it does tell us that, even in years of prosperity, making frequent job changes is not a good thing in recent school leavers. Some studies have shown that managers who move frequently appear to do better than those who do not move, even in countries like Great Britain where job changing is frowned on more than it is here, but school leavers are of course not qualified by substantial training and movement is often because of failure to meet the personal or occupational requirements of the job.

The Number of Times and Months Unemployment, or Self-Supporting is perhaps not surprising during the years of getting started, when many youths go to college and many take a vacation between school-leaving and job-seeking. But it is a contradiction of what many people would have expected.

Other measures not marked as having construct validity were actually of some use, but were omitted because other measures correlated so highly with them, and were logically so similar, that we used the better measures and omitted them. They include Status Improvement: Education, College Grade-

Point Average (limited data with most students not going beyond high school), the Continuity measure of Job Satisfaction, and the two Position Success indices, Employer Ratings having the special defect of poor distribution.

In dealing with the matrix of CPS criteria of success we have lost sight of the distinction between socioeconomic and personal, between external and internal, criteria. Both of the Attained Status measures are external, socioeconomic measures with a psychological component of the high correlations between prestige, ability, and levels. The Job Satisfaction measures are internal, personal, psychological, save for Final Stabilizing Status (coping behaviors), which has been shown to be a combination of internal and external, of social and of personal, components. The Career Progress indices are all external, Attainment of School Goal being the agreement of current job with that desired on leaving school (socioeconomic and personal), Change in Equity and Realism in Moving likewise, but Number of Moves is external and social, while Career Success is self-estimated and therefore internal and largely personal. The Career Satisfaction measures are, as one would expect of attitude scales, essentially internal and personal, but Final Stabilizing Status or coping behavior at age 25 is, as stated earlier, a mixture. Finally, the Occupational Advancement measures are all external and socioeconomic, although Change in Equity has a personal or psychological element.

The Best Criteria for Career and Vocational Education

In considering which success criteria are best for use in follow-up studies of career and vocational education it is important to take into account the need to avoid redundancy or duplication, to economize on the time of respondents to questionnaires, and to consider the time and skill needed in the scoring or encoding of results. In addition, as the objectives

of career and of vocational education are not all identical, despite important common goals, the focus of the follow-up study needs to be taken into account. Table 3 seeks to organize the conclusions of this survey with these considerations in mind.

Table 3
Recommended Criteria for Evaluation

Career Education	Vocational Education	Respondent Time	Scoring
Socioeconomic Status		Reasonable	Moderate
	Employer Ratings	Reasonable	Quick
	Prestige Ratings	Quick	Quick
Opportunity for Self Expression		Reasonable	Moderate
Attainment of School Goals	Attainment of School Goals	Quick	Quick
Change in Equity		Fairly Demanding	Demanding
Realism in Moving		Fairly Demanding	Demanding
Career Establishment		Reasonable	Moderate
Improvement in Occupational Level	Advancement within Occupation	Quick	Quick
Career Concerns		Reasonable	Moderate

It is noteworthy that, in the writers' judgment, only one criterion qualifies as meeting the needs of follow-up studies of both career and vocational education, and that it also has the advantages of requiring little time from respondents in the study and little time or training on the part of judges and encoders. This criterion of the Attainment of School-Leaving Goals has two components, the first of which may consist of the counselors' records of students' vocational objectives, of the school record of the program chosen (on the sometimes unwarranted assumption that the course chosen with its implicit goal is the same as the personal goal at the time of graduation), of the students' stated goals in school-leaving

questionnaires, or some combination thereof, matched with the second component, the occupation engaged in at the time of the follow up.

The two other Vocational Education Criteria listed are Employer Ratings and Prestige Ratings. The former take only a moderate amount of time if a given employer has only a few employees from the class being studied, and if prior work has been done in training rater-supervisors to use the rating forms, although in some situations complex studies of ratings and statistical corrections are warranted and take considerable staff time. A sample form is shown in Exhibit C. Although often found unsuitable as a criterion because of conditions previously mentioned, it is true that in some situations Employers' Ratings are very good criteria. Prestige Ratings may have the superficial appearance of not being conceptually satisfactory criteria, but as has been pointed out, they correlate very highly with ratings for responsibility, income, and intelligence and education, and they are easily made by having scorers rate the subjects' occupations according to a standard scale such as Hamburger's Revision of the Warner Scale (Career Pattern Study, 1971).

These two criteria are not considered suitable for evaluating career education, because they are static, although one might argue that they reflect statuses that are the result of a career development process. They are, perhaps even more, a reflection of vocational training.

For Career Education Evaluation, Opportunity for Self-Expression emerges as a very good measure of job and occupational satisfaction, and can be assessed with a few easily scored questions, shown in Exhibit D in the Appendix.

Change in Equity and Realism of Reasons for Moving are both logically and according to CPS data very good career criteria. Equity here has the

same kind of meaning that it has in the ownership of houses, for example, but denotes educational, social, psychological, and time investments as well as financial. Exhibit E shows part of the CPS form for data collection. Realism of Reasons for Moving involves questionnaires for the obtaining of reasons for taking and for leaving jobs, and scores one against the other to ascertain whether the reasons for leaving a job led to finding what was wanted in the next job. Both of these are clearly time-demanding methods. A modification of the form now being used in two follow-up studies of pupils who graduated in 1980 is provided in Exhibit F, as a more economical and practical method of assessing Realism for Moving, one of the best CPS criteria.

Career Establishment is assessed by means of a few questions, shown with their scoring in Exhibit G. Improvement in Occupational Level compares Hamburger Ratings of each job held, or of first and last job, and obtains the difference score or scores (and their mean, if all changes are considered) to show improvement or loss.

Career Concerns (Super & Thompson, 1981), although not used as a measure in the high school study, was introduced into CPS in the follow-up at age 36, and is therefore discussed here with other CPS measures. In any case, later evidence shows its value as a moderately demanding, readily scored measure of career success. In its final form it assesses the relative concern of the respondent with the vocational or career development tasks of exploration, establishment, maintenance, and if older people are being studied, disengagement. Theory and evidence from a variety of sources show that the most effective young people are concerned with the exploratory tasks of clarifying goals, specifying choices, implementing plans or, if a little older, with stabilizing in an occupation; that the most effective mature

adults tend to be concerned primarily with the establishment tasks of consolifating their positions or advancing in their fields, while the less effective are more concerned with maintaining themselves where they are or with finding something else (exploration) to do. Exhibit H shows one page of the Adult Career Concerns Inventory, together with a sample profile and the set of scores derived from it for one person.

Conslusion

This paper began with a brief glance at attitudes toward vocational success, to being out the fact that they have differed from one time and place to another, and that they are sometimes essentially socioeconomic in their nature, and sometimes personal or psychological.

Next, we considered some of the classical studies of vocational success, noting some of their strengths and their weaknesses, and some of the contributions they have made to the development of better criteria of success. Criteria for judging success in a variety of occupations and in one occupation were looked at.

Then the difference between occupational success and career success was pointed up, with its implications for the selection of criteria. The Career Pattern Study, an on going project at Teachers College, Columbia University, was drawn on for methods, instruments, and data with which to illustrate and document the difference. CPS served also as a basis for making decisions as to the outcomes of vocational and of career education, recognizing that some of their objectives are not identical even though very compatible. The Exhibits appended to this paper should help to make this part of the paper concrete.

[The Exhibits are not enclosed in this report because some were commercial with copyright provisions.]

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CAREER AND VOCATIONAL EDUCATION: INTEGRATING THE CONCEPTS

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Career education and vocational education are both important terms in the current language of education. They are also sources of confusion in the minds of many people. When they are shown together by attaching them to each other with a diagonal or a slash, does this clarify their meanings or merely compound any confusion?

The concept of vocational education is an old one, because training for jobs has a long history, and has been formally recognized by legislators, educators and licensing agencies for most of the present century. The concept of career education is much newer, only ten to twenty years old, because career development first began to be studied with the work of Ginzberg, Roe, Super, and Tiedeman some thirty years ago, when they defined a career as the sequence of occupational positions, and of pre-occupational positions and post-occupational positions, occupied by a person during the course of a lifetime. (Super, 1957)

When the two terms career/vocational education are linked, a combination of preparation is inferred for a long-term sequence of work experience with preparation for the pursuit of some job. This pursuit may be either the life-long job of the individual or merely the first or second in a series of jobs that the person

may obtain. Any job may be pursued by many people, but only one person can pursue a person's career. Each career is unique to its pursuer, even though careers may fall into patterns and be classified according to type.

While the historic purpose of vocational education has been the preparation for entry level employment of students enrolled in secondary and post-secondary institutions, vocational educators are fully cognizant of education for employment as a lifelong, kindergarten through adulthood, process. Basic marketable skills include much more than just job performance skills learned in automechanics, business, computer, media, agricultural and other occupational areas. Basic marketable skills which are essential for employability include interpersonal skills, positive work habits and attitudes, knowledge of personal capabilities and interests and decision making skills, all of which evolve through a lifelong process that begins prior to children entering school and are essential to all persons.

According to Willa Norris (1960), no one knows the exact way satisfactory vocational choice is made. However, most researchers of vocational development emphasize that it is a process, not a single decision, and it begins early in life. The process of vocational choice, is therefore, a function of maturity. Authorities such as Ginzberg, Super and Erickson state that because of this developmental process of career choice, certain stages can be identified.

The career/vocational education concept, presented in this paper, sets the stage for the identification and assessment of

cumulative knowledge, skills, and attitudes developing and/ functioning along a continuum, which, in Super's terms, extends through the life stages of growth, exploration, establishment including preparation and implementation, maintenance and decline. It is important to recognize that stages and substages are merely convenient ways of designating sets of career development tasks that tend to cluster together and that also tend to be encountered most frequently at certain ages. Thus, exploration is most common in adolescence, and is typically followed by establishment, but in middle age some people whose circumstances e.g. job absolence, have changed, find themselves facing the tasks of exploration and/or re-establishment and thus recycle through the stages. There are important individual differences also in the age at which stages and substages are entered when certain developmental tasks are encountered, as in the cases of some students who are ready to choose a program of vocational preparation while still in high school, while others need to spend more time in basic education or in exploration, and are ready for the preparation substage only after leaving high school or even college.

It is generally agreed that most American youth mature vocationally, as well as intellectually, physically, emotionally, and socially and encounter the need to make a series of increasingly complex decisions from early childhood to adulthood. Tiedeman asserts that career maturity is simply one facet of general personal adjustment and may be viewed as parallel to educational achievement.

The role of the educator is to ensure that instructional offerings from prekindergarten through adulthood are geared to support the process of self-actualization by teaching the identified components of career and vocational education. These components should provide, for each individual, the opportunity to develop attitudes, knowledge and skills that should result in the ability to explore, plan, develop, assess and manage a unique occupational career.

It is hypothesized that success in the job, regardless of the level of training or source of the preparation for job entry, is the result of the person interrelating combinations of attitudes, knowledge, skills and opportunities. Each has its own requirements of development.

PURPOSE OF THIS PAPER

With the advent and growth of career education during the decade of the '70's there has been a tendency to place responsibility for teaching certain competencies under the career education umbrella. Consequently, it may be inadvertantly assumed that such competencies receive less attention in the vocational education sector. Such a belief, put into practice, would adversely affect the development of students enrolled in vocational programs. The idea that certain goals should be classified as career goals and others as vocational goals must be reconsidered. This paper was written to clarify the relationships between these two sets of goals. The terms career/vocational will be used in this paper to emphasize the value of combining the concepts, and to try to demonstrate to practitioners, who

now tend to view themselves as concerned with one or the other set that the concepts should be integrated.

BASIC CONCEPTS

Career education and vocational education, both curricular oriented expressions of career development theories, share a common base. Both address:

A lifelong process,

A process that is a unique expression of an individual's capabilities and attitudes,

A process for attaining personal, social and economic independence and recognition,

On-going exploration, self-assessment and decision making,

Development of skills in formal and informal settings, throughout the schooling process, with opportunity for focusing occupation in secondary and/or continuing education,

The value of leisure time for developing capabilities and interests,

Development as a clarification of the self-concept,

The interrelationships of academic and occupational knowledge and skills,

A fundamental need for self expression and social and self, acceptance,

The need to interact with and effectively impact the environment,

A process of a self-fulfillment requiring persistence and the desire to do a job well.

The trust of the career/vocational matrix, the K-12 career infusion models, and other publications related to this paper is to identify such attitudes, knowledge, skills and behaviors that relate to this common base, and then place these in a managable and appropriate kindergarten through adulthood schooling sequence attuned to developmental needs. The value of these experiences

can best be assessed through longitudinal studies. Just as research has demonstrated that some adult behaviors are patterned in the early pre-school and primary environment, it is proposed that career/vocational development studies should be designed to identity and measure patterns of development.

LAWS

The importance of career and vocational education is emphasized in the Federal and State of New Jersey laws and corresponding plans of the State of New Jersey. These laws were passed in order to implement a potential solution to the problem of inadequate decision making. The resulting plans and programs were developed to teach the basic concepts previously stated.

Chart 1 Laws and Plans

Federal VOCATIONAL EDUCATION ACT P.L. 94-482	Federal CAREER EDUCATION ACT P.L. 95-207	N.J. STATE LAW
Sec. 106: "..students assisted in making meaningful occupational choices..."	Sec. 2: "Provides experiences for making occupational choices in suitable vocational areas and/or further education".	N.J.A.C. 6:8-3.5 Curriculum 5. "Provide all pupils guidance and counseling to assist in career and academic planning".
State Plan for Vocational Education Students select from given options at secondary, post-secondary and adult levels.	N.J. State Plan for Career Education Throughout K-12 Curriculum	N.J.A.C. 6:8-3.5 Options available according to law (as described in N.J. State Plan for Vocational Education) (Secondary and Post-Secondary) and N.J. State Plan for Career Education (throughout K-12 Curriculum).
Sec. 101: Specific programs of occupational preparation at secondary and post-secondary levels..Federal grants to States to assist them (1) to extend, improve, and where necessary, maintain existing programs of vocational education. (2) to develop new programs of vocational education. (4) to provide part-time employment	Sec. 2: Integrated in all areas of curriculum. Competencies accomplished in an .."educational process which serves as a preparation for work"...including...vocational education...to fulfill that purpose"	N.J.A.C. 6:8-3.5 10. Provide career awareness and vocational education pursuant to law and regulation. N.J.A.C. 6:8-2.1 5. Students to acquire entry level skills and also to acquire knowledge necessary for further education.

SUMMARY

To summarize, career/vocational education should include these core concepts to be effective:

- Education must include, as an integral component, a life-long process for developing and maintaining basic marketable skills needed for job entry and successful employment.
- Education should be designed to integrate career and educational skills, knowledge, and attitudes pertinent to planning, developing, managing, and assessing an individual occupational career.
- The selection of a vocational program should be based on acceptance of the program on the basis of student readiness and need in terms of intellectual, social, physiological, psychological and vocational maturity, to pursue an occupational choice. The choice should represent a highly appropriate option among the educational offerings.
- Vocational education, to result in occupational fulfillments, must be compatible with the self concepts life goals and career style of the individual.
- A vocational program should be flexible so that selections and adjustments may be made at any point in life from which the individual may decide that personal and environmental conditions warrant it.
- The vocational program must compliment the on-going career exploration and preparation process in which the student has participated from pre-school and kindergarten to the time of program choice and throughout the program.
- Vocational education programs, while focusing on specific occupational areas: should offer wide flexibility in terms of capabilities of students as well as variety of applicability to occupations in related fields.

In the next section of this paper these core concepts are integrated within ten goals. For each goal, research findings and relevant literature are cited to provide the reader an overall view of the breadth and depth of each goal.

GOAL I CONT'D.

way of life are the result of growth and exploration in a nurturant environment. As self-concepts develop in the interaction between the organism and the environment, people match their perceived abilities and traits with those observed in people pursuing various occupations, and, given opportunity, choose one of the good matches. Greater self-knowledge and self-acceptance or esteem combine to facilitate wise occupational choices both in the choice of vocational preparation, occupational entry, and later retraining or change of employment and type of work. Rogers (1951) takes a similar position, as do Roe (1956), Holland (1973) and Crites (1973) in stating that vocational adjustment is a function of the implementation of a self-concept, of self-actualization.

GOAL I

For the young child, physical activity is an important outlet for emotional expression and a source of basic satisfaction. As yet unable to express everything in words, psychomotor activity is often the child's outlet reflecting personality characteristics such as venturesomeness, aggressiveness, sociability, self-confidence and energy level. Ausubel (1978), in writing on this subject, points out that feelings of competence in coping with environment, both material and human, are based in large part upon motor ability. Psychomotor activity gives status in the peer group as well as rights and responsibilities in the home. This activity is basic to independence, and White (1959) too writes of its important role in the development of personal competence. Thus psychomotor behavior is thus a foundation for career and vocational development.

In adolescence and adulthood, Roe (1956) points out, work is the public situation which best provides opportunities for need satisfaction, if people are reasonably fortunate in finding appropriate occupational outlets. An occupational not only provides opportunities to earn money and thus to meet the basic physiological needs, but can also bring social and personal meaning to one's life.

As has been pointed out by Super (1951, 1957, 1963) in a series of much-quoted propositions, that not only work but life satisfactions depend upon the extent to which people find adequate outlets for their abilities, interests, personality traits, and values. Establishment in a suitable work role and

GOAL 1. INCREASE AWARENESS OF SELF, IMPROVE SELF EXPLORATION AND EVALUATION SKILLS

Rationale:

a. maximize strengths and to cope with limitations

b. extend self-realization to occupational options

c. cope with the impact of significant others

d. realize that the clearer the self-concept attained, the more realistic the goals

e. assess behavior and know how to make judgements

f. attain independence and responsibility for self

g. recognize that work is an expression of self

h. the clearer the self perception, the more satisfying and meaningful are expressions and attainment of capabilities

i. assess potential to deal with people, date and things and ideas

j. recognize that values, attitudes and self perception influence level of attainment

k. recognize that personal identify and social recognition are major factors in the selection of a career

l. understand that self-concept development is a continuing process of interation between self and environment.

GOAL 2. IMPROVE HUMAN RELATIONSHIPS AND INCREASE INTERPERSONAL SKILLS

Rationale:

a. see one's self as part of a society of inter-dependent people

b. be sensitive to individual differences and the needs and aspirations of others

c. function effectively with people of both sexes and of different cultures

d. function responsibly, individually and as a part of a group

e. cope with conflicts and resolve differences between self and others

f. respond to societal needs and its authority

g. realize that people appreciate recognition and understanding

GOAL II

It is in the field of human relationships that failures are reported to be most common, whether the persons in question are newly trained vocational and technical school graduates or older men and women working in business, industry and the professions. Educators assume that homes send them pupils who are able to function in relation to other people, and industry assumes that educated people are socially competent people. Fenton (1980) points out that the schools, in their career and vocational education classrooms and activities, and in their programs of orientation to the world of work, must assume responsibility of training in human relations. The sensitivity training and other such programs now so common in executive inservice training need to be extended to the people who enter employment from secondary and post-secondary vocational training and from general career education programs.

Self-esteem is important to effective functioning, and Suttermeister (1963) is only one of many who point out that self-esteem depends heavily on being esteemed by others, which in turn depends upon how people relate to each other. School and work are major theaters for social interaction, and are the theaters which are most under social or organizational control. Occupational life and work roles are intertwined with family and community life and roles (Super, 1980), and Reinhart (1979) too stresses the central importance of the occupational career in the total life career. Occupations, job and workplaces help to determine place of residence, type of home and patterns of

GOAL II CONT'D.

social life (Super, 1957).

A recent trend toward greater interest in the quality of life, and of the work life as it affects life in general, has been noted (Bernstein, 1979). Self-actualization in work, family and leisure are viewed as inseparable. People seek autonomy, responsibility, and social self-fulfillment, with personal identity and with self-esteem, a trend noticeable in youth entering the labor force, in mature adults considering career changes, and in women seeking to enter or re-enter the world of paid work after periods of child-rearing.

GOAL 3. IMPROVE CAREER VOCATIONAL PLANNING AND DECISION-MAKING SKILLS

Rationale:

a. accumulate data through a broad range of experiences and sources

b. take into account personal factors such as values, needs, and abilities

c. be cognizant of and able to cope with forces over which individuals have little control, such as society, employment, economic conditions, government and technology

d. be planful in both short and long range goal setting and implementation

e. ability to use a decision model including: planning, developing, assessing and selecting alternates

f. recognize the potential value and need of risk taking

g. understand the relationship between progressive goal setting and goal attainment, and occupational success

GOAL III

There is a growing recognition of the fact that it is more important for schools to help pupils learn the process of making career decisions than to make any one occupational choice (Hoyt, 1972), for as Super (1957) pointed out at a time when concepts of vocational development were being rethought and empirically tested, vocational development is a process consisting of a sequence of decisions and of experiences and that goes on over a period of time from childhood to old age. Norris (1963), Rubenton (1980) and Ausubel (1980) agree, Rubenton pointing out that the existence of differing decision-making styles has implications for how the process is taught, and Ausubel elaborating upon the many social and personal determinants of each decision in the series that add up to occupational choices. Super (1957) and Tiedeman and O'Hara (1963) have paid special attention to developmental sequences in careers, and currently Jepsen (1974), Harren (1978), Arroba (1977), and others are forging ahead in developing better insights into the career decision making processes, while others like Rubenton (1980) are applying these new insights to instruction in career education courses and activities. Rational decision makers may respond better to rational models such as those developed by the College Entrance Examination Board (Gelatt, 1972) while intuitive decision makers may be helped more by self-analysis methods and dependent deciders may benefit most from help in understanding and coping with their dependence on others.

Personality theorists such as Ausubel (1978) stress the fact

GOAL III CONT'D.

that early work experience is a most important part of reality testing, supporting what Hoppock (1967) and other leaders in vocational guidance have long pointed out as a valuable method of facilitating realistic occupational choices. The pressures brought by financial need, parents and schools to make early, supposedly definitive, career decisions too often preclude this type of developmental exploration. Ausubel supports the career development theorists such as Super and Tiedeman in underlining the importance of combining early development of an occupational identity with the seemingly, but not actually, incompatible goal of flexible planning and exploration.

GOAL 4. DEVELOP POSITIVE WORK ATTITUDES AND APPRECIATION FOR CAREER/VOCATIONAL SUCCESS

Rationale:

a. recognize the uniqueness of the personal and social self

b. recognize that the development of positive work habits is a life long process starting with early childhood

c. realize that positive work habits contribute to career success

d. realize that positive attitudes and habits result from satisfying experiences

e. demonstrate initiative and independence in the execution of tasks

f. develop the desire, concern and habit of doing a job well

g. recognize that in career success, long term persistence is a key quality

GOAL IV

If adult work adjustment is to be achieved, the foundations for the acceptable and constructive behaviors essential to it must be laid in childhood, reinforced in adolescence, and developed in adulthood, because, as noted in connection with Goals 1 and 2, career and vocational development are long-term processes. The expression of interests, the use of abilities, the attainment of values and the satisfaction of needs, depends upon these having been developed, understood and related to opportunities (Super, 1957, 1963).

It has been shown by Gustavson and McLarky (1977) that vocational educators must teach good work habits, positive attitudes, and ability to relate to and communicate with others if the graduates are to be deemed satisfactory by employers. One might infer from this that if youth equipped with clearly vocational skills need and too often lack interpersonal and social skills demanded by their employers, the similar needs of other students in career education programs and those of students not exposed to such courses must be equally great.

The developmental tasks of adolescence have been described from a sociological perspective by Havighurst (1953) and from a physchological viewpoint by Ausubel (1978). They agree on the importance of developing increasing independence, of a realistic sense of identity, of awareness of the needs of others and of the occupational means of self-actualization. From the perspective of employers the same basic traits seem important, although

GOAL IV CONT'D.

couched in different terms such as trustworthiness, adaptability, personal appearance and hygiene, respect and cooperation, and high standards of performance.

GOAL 5. DEVELOPMENT PROFICIENCY IN COMMUNICATION AND COMPUTATION SKILLS

Rationale:

a. recognize communication and computation as significant components of basic marketable skills

b. use listening and verbal skills in the execution of tasks

c. reduce conflict, time loss and waste of materials through effective application of communication and computation skills

d. recognize the importance of communication and computation skills in higher occupational levels

e. recognize that communication and computation skills have impact on acceptance, recognition career mobility

GOAL V

Serious deficiencies in the ability of graduates to use the basic skills at work have frequently been reported in recent years, in all industrialized countries. Technical and technological development results in a need for workers even in semi-skilled jobs to have some competence in reading, writing, oral communication and computation. The schools are most frequently criticized for deficiencies in these skills (Reubens, 1979).

The ability to write business letters, to read and to summarize documents, and to complete complex forms, is now deemed a basic employment skill (Butler, 1979). Johnson (1974) states that it is a function of the vocational-technical school to provide students with the skills needed to acquire, maintain, and upgrade job competence in competitive and complex employment, and that these skills are those of communication and of computation.

Reading and calulation need to be integrated with technical skills for vocational education to be successful, and doing this can give meaning and relevance to reading and to mathematics. Without these skills students (Walencik and Amatrudi, 1979) are soon lost in the foreign language that technical terminology seems to constitute. Thus, The Minnesota Public Schools (1979) have developed a guide intergrating mathematics and occupations and using the existing mathematics curriculum.

GOAL 6. GAIN KNOWLEDGE OF THE CAREER/VOCATIONAL IMPLICATIONS OF SUBJECT MATTER

Rationale:

a. Understand how various subject areas contribute to basic marketable skills

b. realize the value of both formal and informal learning experiences

c. realize that education tests and develops a wide range of aptitudes, interests and abilities

d. practice short and long-range goal setting in educational experience

e. know how education is an integral occupation preparation

f. recognize how education facilitates progressively selective, developmental processes

g. that success in life means active participation in a variety of roles in addition to the occupational.

GOAL VI

Goal 6 overlaps Goal 5, with the difference that Goal 5 deals with skills and Goal 6 with attitudes.

It is pointed out by Ausubel (1978) that children find satisfaction in having impact on their surroundings, that they are motivated by what they see, feel in touching, move and can shape. Activity is a need, leading to exploration and to attempts at mastery. Jordaan (1963), building on the work of experimental psychologists, has developed the rationale underlying occupational exploration in adolescense, and Super and Bowlsbey (1981) have reviewed the literature and done original research to show the relationships between curiosity, exploration, interest, autonomy, time perspective and planfulness: it is presumably these that help students to relate subject matter to occupations and to adult life. Thompson (1973) also points out how the vocational curriculum builds on, use, and further develops language and mathematical skills, together with biological, chemical and physical knowledge.

Career and vocational education combine to expand the role of the community as an active partner in the educational program and process helping to make learning experiences more meaningful and more practical: school-based career education and cooperative education are but two of a number of examples. As a major transmitter of culture, education preserves, passes on and refines the culture in both its general and in its occupational forms (Thompson, 1973).

Career education involves a partnership of teachers, parents,

GOAL VI CONT'D.

and members of the producing, distributing, and servicing occupations and enterprises in furthering the career development of youth and adults. In infused programs, teachers weave career orientation into the regular subjects; in collaborative programs, experiences and materials are developed that go beyond the classroom and shop (Kaiser, 1979). Infusion in generally the favored process, as it maintains and enriches the existing curriculum while helping pupils to understand and appreciate the world of work (Reinhart, 1979). Pupils can participate in developing and in evaluating career education activities, as can employers in providing job experience.

GOAL 7. ACQUIRE AND APPLY SOCIAL-ECONOMIC POLITICAL AND TECHNOLOGICAL UNDERSTANDING

Rationale:

a. recognize how changes in the community structure and function impact career/vocational development

b. learn what options are open and how to cope with factors beyond individual control

c. learn how the individual can join others to modify outside forces

d. learn how life-styles are modified in coping with changes in the community

e. understand the processes of balance between labor and management

f. become aware of the impact of technological change

g. become a knowledgeable producer and consumer of goods and services

h. become an effective manager of personal resources, budgets and investments

i. understand the impact of local, national and world political conditions on occupations

j. be cognizant of the impact of occupational choice on the individual's role and function in the community

k. be aware of the impact of bias and disadvantagement

GOAL VII

Career patterns, i.e., the nature and level of education and occupation attained and the sequence, number, and duration of trial and stable jobs, is determined by a combination of parental socioeconomic level, mental ability, and personality characteristics, as well as by the opportunities to which people are exposed partly because of the above determinants of which they may or may not be cognizant and over which they have varying amounts of control (Super, 1957).

It comes as a shock to many adolescents that the achievement of adult status is not a direct consequence of attaining physical maturity. Having a naive expectation of graduating from adolescence to adult status, they discover abruptly that they have no status in the adult world. Treated in many respects as children, they no longer have even the advantages of the protection afforded children (Ausubel, 1978). In adolescense, social class pressures to choose an occupation that meets the status needs and aspirations of the family and of the individual to whom they are transmitted, become more explicit and more forceful: Democracy does not easily tolerate loss of status. Furthermore, economic pressures reinforce the social pressures, either to go to work soon because of need or to prepare for a highly remunerative occupation in order to meet high living standards (Ausubel, 1978).

In women, tradional role casting as homemakers has tended to make occupational careers less salient than they are in men.

GOAL VII CONT'D.

Women who do aspire to non-tradional roles are often plagued by fear of success with resulting lowering of career motivation, and women considering traditional female occupations appear to be even more likely to be affected by fear of success that may make them seem less feminine (Illfelder, 1980). Despite this there is an increasing percentage of women in the labor force, rising from 15% in 1880 to 51% in 1979 (U.S. Dept. of Labor, 1980). The increasing trends of employment, away from agriculture to manufacturing and from manufacturing to clerical and service occupations and industries have also required and facilitated career mobility.

GOAL 8. INCREASE KNOWLEDGE OF CAREER/VOCATIONAL EDUCATION OPPORTUNITIES

Rationale:

a. ability to evaluate options for appropriateness to aspirations, economic desires, abilities and preferred type of work

b. see the study and exploration of occupations as a developmental life long process continuing through retirement

c. knowing the interrelatedness of jobs and the grouping of occupations into ability and interest clusters

d. extent the study of occupational information into all sources including, the media, education, work experiences, leisure activities and people

e. apply the study of occupations as a science including: classification, socio-economic analyses and measurement of abilities required

f. relate the study of occupational information to individual strengths, limitations, needs and goals

g. ability to evaluate information and experiences and select most appropriate for continuation

GOAL VIII

It has often been pointed out that youth matures vocationally as well as physically, emotionally, intellectually, and socially, and that this development brings with it a series of decision points that are occupationally relevant (Super, et al., 1957; Super, 1957). The facts reported in studies such as the career pattern study (Super and Overstreet, 1960; Jordaan and Heyde, 1979) have had impact on educational practice, as noted by Galloway (1965).

Basic principles of occupations and of career development that should be familiar to all are that, 1) each occupation requires a characteristic pattern of abilities, interests, and personality traits, with tolerance wide enough to allow some variety of occupations for each individual and some variety of individuals in each occupation (Super, 1957), and 2) social and employment trends constitute an opportunity structure which itself contributes importantly to career development and to occupational success (Blau, et al., 1956; Borow, 1956; Miller and Form, 1951; Super, 1957).

Children find and create fantasies about their future selves, and test their capacities and skills in role playing (Maier, 1965; Erikson, 1959). Bugg (1971) has observed that the theories of Ginzberg (1951), Hoppock (1967) and Super (1957, 1963) stress the developmental nature of career choice, and that those of Holland (1973) and Tiedeman and O'Hara imply development, and that, this being the case, career education should begin in the elementary school. Super and Bowlsbey (1981) have in a

GOAL VIII CONT'D.

literature review and in a study of elementary school children put forth data and a theory supporting the handling of instruction in such a way as to encourage curiosity and exploration, and to foster autonomy and planning ahead, in ways essential to career awareness but too often neglected in elementary education concerned with meeting competency objectives.

Since the first publication of the career pattern study results (Super and Overstreet, 1960) evidence has been accumulating that not only junior high school students lack the information and perspectives essential to sound career choices, but that so too do high school seniors (Jordaan and Heyde, 1979; Grotevant and Durrett, 1980). Ausubel (1978) forcefully sums up the impact of lessening employment opportunity, a complex and changing technology, and lack of work experience on the career development of youth.

GOAL 9. MARKETABLE SKILLS AND ADAPTABILITY

Rationale:

a. recognize the need to develop proficiency in a selected occupation

b. recognize that the successful execution of a job or task often involves a combination of skills and knowledge

c. aware that skills developed for one occupation have application in many others occupations

d. become cognizant of how the work environment affects individual needs, interests, attitudes, and skills

e. recognize that marketable skills include: creativity, interpersonsl skills, leadership, management of tasks and time and persistence

f. realize that the development of basic marketable skills includes personality factors such as temperament, motivation, competitiveness

g. recognize that marketable skill development is a life long process

GOAL IX

It is important for career and vocational education programs that those responsible for them understand employer expectations of their new employees. These include ability to relate effectively to other people and to act autonomously and responsibly, as well as to learn and to perform the special tasks of the job for which they are hired (Porreca and Stallard, 1975). The result of this awareness is a series of attempts to develop a broader range of educational objectives that previously prevailed, involving concepts such as those of confluent education (Brown, 1971) and life career development (Bingham, 1972) which include career guidance goals such as self-knowledge, interpersonal skills, career planning knowledge and skills and knowledge of the worlds of work of leisure.

Another important realization among educators has been revealed in, for example, Sjogren's (1971) review of the literature which showed that the adaptability of workers to the new situations which are increasingly common in our changing economy and technology is related to many factors in addition to the technical requirements of the work. These include the content of the work, control over the work, supervision, management, advancement opportunities, benefits, co-workers and working conditions. It must be noted that these are just job-factors: in addition, adaptability has also been shown as a function of the family situation, community conditions and the quality of the non-work life (Campbell, Converse and Rogers, 1975).

GOAL IX CONT'D

The term "marketable skills" is currently very much in vogue. The concept has face validity. Its validity is supported by the many studies of success and failure at work, referred to above. But most of the knowledge of the nature and role of marketable skills comes from survey work, reflecting the opinions of employers. There is room, there is need, for more objective studies of work behavior (Vogler and Asche, 1980), perhaps a new type of job analysis, "work analysis", to serve as a basis for the development of marketable skills curricula.

GOAL 10. DEVELOP LEISURE PREPFERNCES AND COMMUNITY PARTICIPATION

Rationale:

a. Use leisure time effectively in developing capabilities and interests

b. select leisure activities which meet individual needs for personal and social relaxation, exploration and development

c. organize leisure activities relative to time, goals and desired proficiency

d. see one's self as a contributing member of the community

e. exercise responsible citizenship in local, state, national and world affairs

f. develop dependability in meeting community needs.

g. share equibability in the life of the family unit

h. be sensitive to the need for support and independence as needed

i. recognize equality in household and childrearing responsibilities

j. establish an image of responsibility in the social environment of the community

k. exercise responsible citizenship in local, state, national and world affairs

GOAL X

Careers, Super (1980), are constellations of roles persons develop, peak and decline throughout a lifetime. These roles include those of worker, spouse, parent, homemaker, citizen and pursuer of leisure activities. Education is concerned with preparation for all of these roles.

Career and vocational education in American education focus on the worker role. But work and leisure are closely related, because as Super (1940) has shown, the vocational interests and abilities of some men find better outlets in their hobbies than in the jobs, and that the best satisfied of his subjects were men whose avocations provided them with additional outlets for their actual occupations. Similarly, Steer (1970) found that the retired educators who were happiest in retirement were those who continued to pursue, as leisure activities, work and pay activities from their preretirement years. The play of children can be viewed as preparation for careers, as they role play what they see parents, teachers, doctors, nurses and mail carriers do.

Kaplan (1978) points out that many contemporary countries view leisure as a role for which preparation is needed, to balance social and technological change and to preserve cultural values. Reinhart (1979) states that, for people to learn how to use their leisure better; they need to be educated for autonomy; Super and Bowlsbey (1981) include this also as an objective of career education. This type of education can be furthered through clubs and through the many youth and adult organizations that already exist in our complex society (Reinhart, 1979).

GOAL X CONT'D.

Learning takes place through experience, the schools' function is to organize and make experience available in masterable modules and to guide students in their use.

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CAREER EDUCATION: OCCUPATIONAL SURVIVAL SKILLS

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Super and Gambino in their paper (1981) presented an over-view of the concepts of vocational education and career education. Super stressed that both vocational education and career education have a common base and common core concepts. His presentation was organized around ten career vocational education goals (Exhibit A).

This paper is focused on some of the underlying skills and on methods of assessing those skills. Analysis of the ten goal statements reveals that they include a variety of skills, going beyond those needed just for the performance of the technical tasks of the specific job. They include: self-evaluation skills, interpersonal skills, decision-making skills, communication skills, as well as marketable skills, i.e. those related to a particular job opening. In addition, there are relevant attitudes and knowledges and off-the-job behaviors which contribute to the over-all goal of developing in students the capacity to live satisfying and socially useful lives.

The career education leaders have from the beginning devoted much attention to clarifying career education goals and setting up corresponding program objectives, primarily in terms of skills and attitudes. In a recent monograph on career education, Ken Hoyt (1980) describes the cognitive goal of career education to be:

> To provide all students at all levels of the educational system with a set of general employability/adaptability/promotability skills that will enable them to change with change in a rapidly changing society (Hoyt, 1980, p. 3). He lists the 10 skills (see exhibit B) as:

EXHIBIT A

CAREER/VOCATIONAL EDUCATION GOALS

GOAL 1. INCREASE AWARENESS OF SELF, IMPROVE SELF EXPLORATION AND EVALUATION SKILLS

GOAL 2. IMPROVE HUMAN RELATIONSHIPS AND INCREASE INTERPERSONAL SKILLS

GOAL 3. IMPROVE CAREER/VOCATIONAL PLANNING AND DECISION-MAKING SKILLS

GOAL 4. DEVELOP POSITIVE WORK ATTITUDES AND APPRECIATION FOR CAREER/VOCATIONAL SUCCESS

GOAL 5. DEVELOP PROFICIENCY IN COMMUNICATION AND COMPUTATION SKILLS

GOAL 6. GAIN KNOWLEDGE OF THE CAREER/VOCATIONAL IMPLICATIONS OF SUBJECT MATTER

GOAL 7. ACQUIRE AND APPLY SOCIAL-ECONOMIC, POLITICAL AND TECHNOLOGICAL UNDERSTANDING

GOAL 8. INCREASE KNOWLEDGE OF CAREER/VOCATIONAL EDUCATION OPPORTUNITIES

GOAL 9. MARKETABLE SKILLS AND ADAPTABILITY

GOAL 10. DEVELOP LEISURE PREFERENCES AND COMMUNITY PARTICIPATION

(Hoyt,1980,p. 3)

EXHIBIT B

To provide all students at all levels of the education system with a set of general employability/adaptability/promotability skills that will enable them to change with change in a rapidly changing society.

The 10 general employability/adaptability/promotability skills, as listed in official OE office of career education policy publications are:

1. Basic academic skills
2. Skills in practicing good work habits
3. Skills in developing and using personally meaningful work values.
4. Skills in understanding and appreciating the private enterprise system
5. Skills in self-understanding and understanding of educational/occupational opportunities
6. Career decisionmaking skills
7. Job seeking/finding/getting/holding skills
8. Skills in making productive use of leisure time (unpaid work)
9. Skills in overcoming bias and stereotyping as they act to defer full freedom of career choice for all persons
10. Skills in humanizing the workplace for oneself

Great progress has been made, during the decade of the 1970's, to collect and disseminate hard data demonstrating career education's effectiveness in delivering these skills to persons. A dramatic example of such evidence can be been in a 1979 OCE publication summarizing data from nine comprehensive career education evaluation studies, each of which has successfully passed through the division of education's joint dissemination review panel (OCE, 1979), Collectively, these studies produced statistically significant results demonstrating the ability of career education to deliver almost all of these 10 skills.

In addition, literally hundreds of other evaluation studies in career education were completed during the decade of the 1970's. Many of these have been summarized in monographs including those written by Enderlein (1976), by Bhaerman (1977), by Datta (1977), by Bonnet (1978), and by Mitchell (1977). Collectively, the evaluation studies summarized in such monographs clearly demonstrate that a career education approach can - when correctly applied - provided students with the general employability/adaptability/promotability skills included in this first career education goal. While the evidence is not uniformly or overwhelmingly positive, it is certainly much more positive than negative.

As we enter the decade of the 1980's, three things seem clear regarding this goal: (a) the need for these general employability/adaptability/promotability skills is still present - and certain to continue; (b) career education has demonstrated itself to be an effective delivery system for providing such skills; and (c) no alternative system purporting to provide persons with such skills has demonstrated itself to be more effective than career education. These facts, too, have implications for the future of the career education movement during the decade of the 1980's. (Hoyt, 1980, 3-4)

1. Basic academic skills
2. Skills in practicing good work habits
3. Skills in developing and using personally meaningful work values
4. Skills in understanding and appreciating the private enterprise system
5. Skills in selfunderstanding and understanding of educational/occupational opportunities
6. Career decision making skills
7. Job seeking/finding/getting/holding skills
8. Skills in making productive use of leisure time (unpaid work)
9. Skills in overcoming bias and stereotyping as they act to deter full freedom of career choice for all persons
10. Skills in humanizing the workplace for oneself (Hoyt, 1980, p. 3)

Hoyt also makes the rather significant and challenging statement:

> As we enter the decade of the 1980's, three things seem clear regarding this goal:
> (a) the need for these general employability/adaptability/promotability skills is still present--and certain to continue;
> (b) career education has demonstrated itself to be an effective delivery system for providing such skills; and
> (c) no alternative system purporting to provide persons with such skills has demonstrated itself to be more effective than career education. These facts, too, have implications for the future of the career education movement during the decade of the 1980s. (1980, p. 3)

Another useful analysis by Mitchell of the American Institutes for Research for the National Advisory Council for Career Education is presented in a 1977 report titled, career development needs of seventeen year olds: how to improve career development programs (Mitchell, 1977). Exhibit C, from Mitchell's table of contents, presents her five objectives and the underlyings skills and knowledge. In this table of contents are the operationally defined skills that relate to a broad spectrum of career development needs and are in line with the broad goals of career education as presented previously.

Why all this emphasis on skills and attitudes? Because career education, as currently concerned, goes beyond the objective of merely, as if that were easy, training students to acquire a set of job skills so that an employer will be willing to hire them.

Fine, long before career education was named and defined, while he was engaged in developing a revised job classification system for the Labor Department's Dictionary of occupational titles, recognized that there are several types of job relevant skills: adaptive skills, functional skills, and specific content skills. Exhibit D presents his description of these types.

Note the last paragraph in Exhibit D. The implication for the school-based career education program is that considerable emphasis needs to be placed on developing the individual's functional skills to as high a level as possible and on nurturing the adaptive skills which will enable the individual to meet the total job requirements.

One strong incentive for the introduction and rise of the career education movement has been the criticism (rightly or wrongly) that vocational education was not meeting the training needs of our changing industrial and

EXHIBIT C

SECTION II: CAREER DEVELOPMENT NEEDS OF SEVENTEENS: IMPLICATIONS FOR YOUR PROGRAM.....

Objective I: Prepare for Making Career Decisions
- Know Own Characteristics Relevant to Career Decisions
  - Talked Seriously About Futue Plans
  - Self-Perceptions of Abilities
- Know Characteristics and Requirements of Different Occupations
  - Matching Occupations with Physical Characteristics/ Skills
  - Reasons for Accepting/Not Accepting Promotion
- Relate Own Personal Characteristics to Occupations Requirements
  - Abilitites to Link Leisure Activities with Possible Jobs
- Plan for Career Development or Change
  - Relating School Subjects to Jobs
  - Knowledge of Sources of Job Information
  - Linking Interests and Abilities to Jobs

Objective II: Improve Career and Occupational Capabilities
- Part-Time or Summer Job Experience
- Lessons, Training and Courses Taken Outside of School

Objective III: Possess Skills That are Generally Useful in the World of Work
- Have Generally Useful Numerical Skills
  - Computing Dimensions and Areas
  - Mathematical Conversions
- Have Generally Useful Communication Skills
  - Completing an Order Blank
  - Participation in Discussion with Organized Group
- Have Generally Useful Information-Processing Skills and Decision-Making Skills
  - Helping a Non-English-Speaking Person
  - Judging a Boss's Behavior Toward His Employees
- Have Employment Seeking Skills
  - Kinds of Part-Time Work for Seventeens
  - Writing a Letter of Application

Objective IV: Practice Effective Work Habits
- Assume Responsibility for Own Behavior
  - Placement of Responsibility for Factory Accident
  - What to Do About an Unfair Rule
- Use Initiative and Ingenuity to Fulfill Responsibilities

Objective V: Have Positive Attitudes Toward Work
- Recognize the Bases of Various Attitudes Toward Work
  - Reasons for Difficulty in Finding Job
  - Reasons for Liking Repetitive Job
- Seek Personal Fulfillment Through Own Achievements
- Value Work in Terms of Societal Goals

(Mitchell, 1977, P. iv-v)

business society and that there was inadequate communication between the educational system and the business system.

When one looks objectively at the criticism, however, it is difficult to find much objective evidence of this lack of articulation. Most of the studies of labor turnover are statistical and merely count the number of job leavers in relation to hirings or to labor force. Causes of turnover are usually in terms of employee reasons for leaving rather than for reasons for being dropped. Nowadays "firing" is relatively infrequent; thus the turnover studies do not usually indicate what employers want from their employees.

It is a fortunate coincidence that one of the direct durveys of employer needs was done within the past year in New Jersey. (Goldberg and Loos, 1981) Among other things, the study provided information on skills attitudes, and values which employees found either most conspicuously lacking or most common in current job applicants.

EXHIBIT D

9. Human performance is conceived as involving three types of skills: adaptive, functional, and specific content:

Adaptive Skills refer to those competencies that enable an individual to manage the demands for conformity and/or change in relation to the physical, interpersonal, and organizational arrangements and conditions in which a job exists. Included are management of oneself in relation to authority; to impulse control; to moving towards, away from, or against others; to time (e.g., punctuality and self-pacing); to care of property; to dress (e.g., style and groming). These skills, rooted in temperament, are normally acquired in the early developmental years, primarily in the family situation and among one's peers and reinforced in the school situation.

Functional Skills refer to those competencies that enable an individual to relate to Things, Data, and People (orientation) in some combination according to personal preferences and to some degree of complexity appropriate to abilities (level). They include skills like tending or operating machines; comparing, compiling, or analyzing data; and exchanging information with or consulting and supervising people. These skills are normally acquired in educational, training, and avocational pursuits and are reinforced in specific job situations.

Specific Content Skills refer to those competencies that enable an individual to perform a specific job according to the standards required to satisfy the market. These skills are normally acquired in an advanced technical training school or institute, by extensive on-the-job experience, or on a specific job. They are as numerous as specific products, services, and employers who establish the standards and conditions under which those products and services are produced.

In effect, the degree to which a worker can use his functional skills effectively on a job is dependent on the degree to which his adaptive skills enable him to accept and relate to the specific content skill requirements. (Fine, 1971, p. 79-80)

To summarize the Goldberg and Loos study, the survey asked representatives of companies, usually supervisors, to select (from a list of 23 skills, 22 attitudes, and 19 values) those SAV's, as they were termed, which were MOST DIFFICULT TO FIND, and then those considered MOST COMMON. By combining importance with frequency of occurrence, the analysis yielded two sets of SAV's namely, those rated Important and Common and those rated Important but Difficult to Find. Exhibit E presents these lists.

Exhibit E

Employer Rating of Skills, Attitudes, Values

Those Rated MOST IMPORTANT and MOST COMMON

Cooperates with fellow workers
Operating tools and equipment relevant to the job
Performing tasks requiring manual-perceptual skills
Understanding and following oral and written instructions
Willingly acquires additional training and education relevant to job function
Practices safety toward self, and others
Communicates effectively with clients and fellow workers
Understands the economic interrelationship between the employee's productivity and the employer's success and vice-versa
(Goldberg and Loos, 1981, p. 69)

Those Rated MOST IMPORTANT and MOST DIFFICULT TO FIND

Exhibits positive work attitude
Exhibits pride in workmanship
Reading, writing and speaking effectively
Adapting and adjusting to change, is flexible
Reacts positively to constructive criticism
Values checking own work for thoroughness and accuracy
Communicates effectively with clients and fellow workers
Demonstrates initiative on the job
Budgeting time effectively
Uses time and energy efficiently
Understands and follows oral and written instructions
Copes with authority exercised by others in constructive ways
(Goldberg and Loos, 1981, p. 37)

Some implications of these findings are:

The respondents considered attitudes and values as critical. Of the top 21 SAV's in order of importance, 8 were skills, 9 were attitudes, and 4 were values. Exhibit F presents this list.

The top 5 appear to describe a hard-working, cooperative, teachable worker who is identified with his job.

The major skill areas deal with taking instructions, operating tools and equipment, communicating, and adapting to change (i.e. learning). The basic skills of reading, writing, and speaking were also in the top 21.

The five MOST DIFFICULT SAV's were:

A5. Exhibits positive work attitudes
V5. Exhibits pride in workmanship
S14. Reading, writing, and speaking effectively
S13. Adapting and adjusting to change
A11. Reacts positively to constructive criticism
(Goldberg and Loos, 1981, p.37)

The five MOST COMMON SAV's were:

V18. Desires upward economic mobility
A2. Cooperates with fellow workers
S12. Operates tools and equipment relevant to the job
V7. Respects an individual's rights and responsibilities for a self-determined life style
S4. Performs tasks requiring manual-perceptual skills
(Goldberg and Loos, 1981, p. 45)

One complication in the interpretation of the findings of Goldberg and Loos is that there were differences according to the occupational cluster represented by the respondent. The report presents a breakdown according to eleven occupational clusters and to five sub-groups according to size of company. There are differences, particularly among occupational clusters.

One additional source of relevant data on occupational survival skills is a recent study, reported in Career education news, which listed leading causes for employees being fired, as given by a sample of employers in Texas. Exhibit G presents the results. Here the differences among employment sources are not very great, except for government, which is more concerned with "mistakes" and less with "doesn't take initiative."

Exhibit F

Rank Order	Quality		% of Respond
1	S15	Understanding and following oral and written instructions	65
2	A5	Exhibits positive work attitude	61
3.5	A2	Cooperates with fellow workers	56
3.5	V5	Exhibits pride in workmanship	56
5	S12	Operating tools and equipment relevant to job	54
6	A16	Demonstrates initiative on the job	52
7	S23	Communicating effectively with clients and fellow workers	51
8.5	S13	Adapting and adjusting to change, is flexible	45
8.5	V8	Values checking own work for thoroughness and accuracy	45
10	A6	Works independently when necessary	40
11	A11	Reacts positively to constructive criticism	38
12	S4	Performing tasks requiring manual-perceptual skills	37
13	A3	Copes with authority exercised by others in constructive ways	35
15.5	S19	Organizing self and situations to accomplish tasks	34
15.5	A10	Practices safety toward self and others	34
15.5	A19	Uses time and energy efficiently	34
15.5	V10	Willingly acquires additional training and education relevant to job function	34
18.5	S10	Budgeting time effectively	32
18.5	S14	Reading, writing and speaking effectively	32
20.5	A9	Completes assignments on time	30
20.5	V4	Maintains good health, neatness, grooming and fitness habits	30

(Goldberg and Loos, 1981, p. 20)

Today's workshop is paying particular attention to the identification and measurement of what are being called occupational survival skills. The author of this paper is completely in agreement with the term "survival," with its implication of danger and fatality. But Sidney Marland's use of the term to dramatize the fact that the educational system has the responsibility for preparing individuals to cope with the complexities of surviving in the world of work certainly has had impact (Nelson, 1979).

Exhibit H presents a summary of the skills as developed by a project headed by Robert Nelson at the Department of Vocational and Technical Education at the University of Illinois at Urbana-Champaign. The project included curricular provisions for developing these skills in students. The purpose is to use them as criteria for identifying and measuring their occurence in our student.

EXHIBIT G

11 LEADING CAUSES FOR BEING FIRED FROM THE JOB

	Absenteeism	Lack of Interest in Job	Makes Costly Mistakes	Doesn't Follow Instructions	Unwilling to Learn	Doesn't Show Initiative	Doesn't Get Along Well with Co-workers	Argues with the Boss	Not Prompt in Assignments	Tardiness	Immaturity
TYPE OF EMPLOYMENT:											
Overall Rank order	1	2	3	4	5	6	7	8	9	10	11
Wholesale/Retail	1	2	4	3	5	6	7	8	9	10	11
Construction	1	2	3	4	5	6	8	9	7	10	11
Agriculture	1	2	4	3	5	9	8	6	10	7	11
Communications/ Public Utilities	1	2	3	4	5	7	9	11	8	6	10
Finance/Real Estate	3	2	1	4	5	8	7	10	6	11	9
Manufacturing	1	2	3	4	5	8	7	9	10	6	11
Service	1	2	3	4	5	6	7	8	10	9	11
Government	1	3	5	2	4	10	6	7	8	11	9
Mining	1	2	6	3	4	8	5	7	11	10	9

108

CHECK THESE -- Job security isn't what it used to be, as members of the Texas Advisory Council for Technical-Vocational Education (Texas A & M University) recently found out. They asked employers to list the leading causes of employees being terminated. Surprisingly, employees were frequently fired for seemingly minor offenses such as absenteeism and lack of job interest. In some job clusters, people were not always fired for such things as making costly mistakes and not following instructions. The reasons obviously varied from job cluster to cluster, see chart, condensed for CEN by Marc E. Hull, Research Associate, Texas A & M University, College of Education, College Station, TX 77843.

(Katz, 1976, p. 2)

EXHIBIT H

Occupational survival skills

1. Working in Organizations
2. Understanding Self
3. Motivation for Work
4. Interpersonal Relations
5. Effective Communication
6. Using Creativity at Work
7. Problem Solving
8. Authority and Responsibility
9. Coping with Conflict
10. Coping with Change
11. Leadership
12. Adapting and Planning for the Future (Nelson, 1979, p.10)

These twelve topics can be grouped into the following three major skill areas: 1) Human Relations Skills, 2) Organizational Skills and 3) Coping Skills. The relevance of these three areas to skills to occupational survival may be described as follows:

1) Human Relations Skills. These skills are basic to all human interactions, on and off the job. While technical skills are essential on the job, lack of interpersonal competence is one of the most frequent reasons for organizational conflict and job dissatisfaction. It is important for workers to have knowledge of human behavior and how relations between people affects job productivity as well as personal well-being skills in developing effective interpersonal relations through an understanding of self and others and skills in communicative processes between people at work are important for workers at all levels within the organization. (Nelson, 1979, p. 13)

2) Organizational Skills. Another area of skills closely related to occupational success pertains to the organization. Students should be oriented to the following concepts: a) an understanding of the reasons why people work, b) the characteristics or organizations, c) reasons for forming organizations, d) why people join organizations, and e) what happens in organizations. Students should also understand the factors which motivate people to do their best work. Skills relating to creativity, problem solving, and in basic skills of reading, writing, and arithmetic are also extremely important to job success in organization. (Nelson, 1979, p. 13-14)

3) Coping Skills. In today's work, changes are reapidly taking place in technology, communications, organization, values and education. Students should be aware of possible future trends which will affect their personal life as well as their work. More importantly, students whould be prepared for future work situations where they will be required to identify, confront, and help solve problems resulting from changes within the organization as well as changes brought about by forces in the environment which affect the organization. (Nelson, 1979, p. 14)

Appraising Student Skills

Deciding on what skills are important and constructing methods for developing these skills in students are not sufficient. The total process involves measuring the outcomes of instructional methods by finding out whether they have in fact resulted in the changes in student behavior and attitudes. This paper is not the appropriate vehicle for an extended discussion of evaluation procedures and problems but it is necessary to point out a few basic principles of appraisal. They are:

The variables to be measured must be definable, particularly in operational terms.

If not directly observable, they should be amenable to relatively objective inference.

If not quantifiable in terms of observable outcome, degrees of the variable should be described in observable or inferable terms.

Behaviorial descriptions are better than normative ones.

Some samples of evaluation guider to examine might be appropriate. Exhibit I is an example which fails to meet the above specifications. Exhibit J is better but still uses ambiguous terms like "frequent," "generally," "some," "above average." Exhibit K is a good attempt to be objective and easily interpreted.

These examples illustrate a basic dilemma in the rating of job performance. If one restricts the measurement to only those variables which meet strict criteria for reliability, i.e., directly observable and quantifiable, one is restricted to only a few aspects of performance and often the least important. As one expands appraisal to include the more complex and more important variables, such as motivation for work, or initiative, or dependability, one has to depend more and more on indirect evidence or

inferences or only occasionally observable behavior. The only resolution of this dilemma is compromise, i.e. meeting the criteria as well as possible even though not perfectly, and judicial use of the ratings, that is, looking for corroboration, multiple ratings and raters, etc.

Finally, here are some guides (Exhibits L and M) to use in the development of sutdent profiles which will help assess and record a given student's status with respect to occupational survival skills:

Carefully define the skill

List the kinds of observable behavior which clearly represent the skill

List the kinds of behavior from which levels of the skill can be inferred

Develop descriptive statements which represent levels of the skill

Describe a system for insuring that the ratings are made systematically and on an adequate sample of the student's performance.

EVALUATION INSTRUMENT PROPOSED EXHIBIT I

As you know, the district is in the process of developing an evaluation instrument that will provide the means for self-appraisal and constructive critical analysis involving both the observor and the observed. In the course of the research of existing evaluative criteria, we came across the following rating form (from a waggish principal) that we are pleased to share with you:

PERFORMANCE FACTORS	Far Exceeds Job Requirements. SCORE: 5 pts	Exceeds Job Requirements SCORE: 4 pts.	Meets Job Requirements SCORE: 3 pts.	Needs Some Improvements SCORE: 2 pts.	Does Not Meet Minimum Requirements. SCORE: 1 pt.
QUALITY	Leaps tall buildings with a single bond	Must take a running start to leap over tall buildings.	Can leap over short buildings only.	Crashes into buildings when attempting to jump over them.	Cannot recognize buildings at all
TIMELINESS	Is faster than a speeding bullet.	Is as fast as a speeding bullet.	Not quite as fast as a speeding bullet.	Would you believe a slow bullet?	Wounds self with bullets when attempting to shoot.
INITIATIVE	Is Stronger than a locomotive	Is stronger than a bull elephant	Is stronger than a bull	Shoots the bull.	Smells like a bull.
ADAPTABILITY	Walks on water consistently	Walks on water in emergencies.	Washes with water.	Drinks Water	Passes water in emergencies.
COMMUNICATION	Talks with God	Talks with the Angels.	Talks to himself.	Argues with himself.	Loses these arguments.

EMPLOYEE EVALUATION
- Rating Guide -
NON EXEMPT LAB PERSONNEL

EXHIBIT J

FACTOR	UNSATISFACTORY	MARGINAL	EXPECTED	ABOVE AVERAGE	OUTSTANDING
Accuracy & Completeness of Work	Frequent and repeated errors	Occasional errors Work incomplete	Few errors Work usually complete	Errors rare Work complete	Errors Extremely rare Work always complete
Accuracy & Completeness of Records	Poor records Important data not recorded	Records messy	Few errors Data recorded	Records up to date All data recorded	Records complete Concise, point way to future work
Working Speed	Very slow on routine work	Does enough to get by	Good Producer	Above average speed	High Speed
Neatness	Messy work area	Occasionally cleans up untidy	Reasonably neat	Seldom needs reminder	Meticulous
Judgment and Common Sense	Does not understand work	Requires detailed direction Sometimes illogical	Needs some guidance Usually reliable	Plans work well Needs little direction offers logical suggestions	Thinks quickly, logically
Application	Frequently wastes time	Occasionally wastes time	Needs some guidance	Usually busy	Always busy, interested
Dependability	Required constant reminders	Occasional reminders	Completes work as directed	Needs little supervision	Always reliable
Attitude	Uncooperative Belligerent	Generally Cooperative	Team worker	Good team worker	Excellent team worker Diligent
Reaction to Criticism	Angers Fails to change	Disregards Somestimes resentful	Accepts and modifies behavior	Receptive Quick to follow advise	Welcomes advice and suggestions
Desire to Learn	No interest in work	Learns only as required	Interested in work	Interested in learning new skills	Welcomes new ideas and assignments. Studies idependently
Desire to Assume Responsibility	Buck passer	Reluctant to assume responsibility	Willing to assume responsibility	Interested in new duties Wants to assume responsibility	Eager to assume responsibility

COMPOSITE

EMPLOYER JOB SURVEY

EXHIBIT K

v.

Optional

Employer _____

Address _____

ACCURACY OF WORK	INITIATIVE
_____1. Makes many errors	_____1. Doesn't exhibit any
_____2. Is careless	_____2. Very Little
_____3. Is fairly accurate	_____3. Average
_____4. Is careful	_____4. Offers many suggestions
_____5. Is very accurate	_____5. Very original
NR	NR
CARE OF WORKING SPACE	**ATTENDANCE**
_____1. Very untidy	_____1. Off a great deal no valid reason
_____2. Careless	_____2. Off occasionally no valid reason
_____3. Just passable	_____3. Off occasionally with valid reason
_____4. Keeps space clean	_____4. Seldom Off
_____5. Space very clean and orderly	_____5. Never tardy
NR	NR
HANDLING OF TOOLS & EQUIPMENT	**ATTITUDE TOWARDS CO-WORKERS**
_____1. Rough	_____1. Does not get along
_____2. Careless	_____2. Look down on them
_____3. Indifferent	_____3. Neutral
_____4. Careful	_____4. Good
_____5. Very careful	_____5. Well liked, very cooperative
NR	NR
SPEED	**ATTITUDE TOWARDS FOREMEN**
_____1. Very slow	_____1. Disrespectful
_____2. Slow	_____2. Does not cooperate
_____3. Ordinary	_____3. Average
_____4. Fast	_____4. Cooperates
_____5. Very fast	_____5. Very respectful, helpful
NR	NR
USE OF WORKING TIME	**OBSERVANCE OF SAFETY RULES**
_____1. Very wasteful	_____1. Disregards rules only
_____2. Loafs with others	_____2. Disregards when not watched
_____3. Passable	_____3. Average
_____4. Busy	_____4. Observes rules
_____5. Very busy	_____5. Observes rules, has own rules too
NR	NR
USE OF MATERIALS	**ACCIDENT RECORD**
_____1. Wasteful	_____1. Many accidents thru carelessness
_____2. Careless	_____2. Minor injuries thru carelessness
_____3. Fair	_____3. Few minor injuries
_____4. Good	_____4. Seldom injured
_____5. Very careful	_____5. Never gets injured
NR	NR
RESPONSIBILITY	**PERSONAL APPEARANCE, CLEANLINESS**
_____1. Buck passer	_____1. Slovenly and dirty
_____2. Evades responsibility	_____2. Untidy
_____3. Passable	_____3. Fair
_____4. Likes it	_____4. Neat and clean
_____5. Seeks it and handles it well	_____5. Exceptionally pleasing
NR	NR

(NR) No response

Section 5. Program Operations

Exhibit No. 5. Enrollee Work Evaluation

WORK INCENTIVE PROGRAM
Enrollee Work Evaluation

ENROLLEE NAME (Last; first, middle initial)	DATE	POSITION	JOB STATION

In a major extent, the success of the student involved in a work-experience, education-training depends upon an accurate analysis of his or her traits and skills. We would therefore appreciate your cooperation in carefully completing the following rating sheet. By showing the trainee's abilities and limitations, you will be helping the WIN program render a better service and at the same time this rating sheet will offer a basis for future employment. Discuss this evaluation with your employee, as it will give him a better understanding of the job responsibilities.

PLEASE MAKE COMMENTS

CRITERIA	GRADE (use ✓)					COMMENTS
	Superior A	Good B	Average C	Poor D	Fail F	
1. Acceptance of responsibility. (Follows directions, keeps on the job without close supervision)						
2. Displays initiative in his or her work (Starts work without being told)						
3. Relationship with other employees, students and/or adults. (Tact, courtesy, cooperation)						
4. Displays accuracy in his or her work. (Thorough and efficient)						
5. Promptness in reporting to work.						
6. Regularity in reporting to work						
7. Personal cleanliness, grooming, and dress appropriate to job.						
8. Conduct, (Honesty, integrity, and respectfulness, uses good judgement)						

EXHIBIT L Con't

9. Personal traits. (Cheerfulness, sense of humor, ability to take criticism, self-confidence)						
10. Speed						
11. Skills used on the job. (How well they have been mastered)						
TOTAL PERFORMANCE RECOMMENDATION						

We have discussed the evaluation given on this form.

SIGNED: _____ _____

(Job Supervisor) (Enrollee)

(RETURN TO WIN OFFICE)

BWTP 144
JUL '68

116

CITY OF NEW YORK | EMPLOYEE EVALUATION | DEPARTMENT OF HOSPITALS

NAME | TITLE | DATE OF APPOINTMENT | SALARY

BUREAU OR HOSPITAL | DIVISION | FROM ____ TO ____ PERIOD

NATURE OF ASSIGNMENT

EXHIBIT M

ADMITTING CLERK

RATE EACH FACTOR: OUTSTANDING / SATISFACTORY / IMPROVEMENT NEEDED / UNSATISFACTORY

CHECK EACH ITEM: +STRONG | STANDARD | -WEAK

USE COMMENTS SPACE TO DESCRIBE EMPLOYEE'S STRENGTHS AND WEAKNESSES. GIVE EXAMPLES OF WORK WELL DONE AND PLANS FOR IMPROVING PERFORMANCE. (FACTOR RATINGS OR UNSATISFACTORY OR OUTSTANDING MUST BE SUBSTANTIATED BY COMMENTS).

1. QUANTITY
   - ☐ AMOUNT OF WORK PERFORMED
   - ☐ COMPLETION OF WORK ON SCHEDULE

2. QUALITY
   - ☐ ACCURACY
   - ☐ NEATNESS OF WORK PRODUCT
   - ☐ THOROUGHNESS
   - ☐ ORAL EXPRESSION
   - ☐ WRITTEN EXPRESSION

3. WORK HABITS
   - ☐ OBSERVANCE OF WORKING HOURS
   - ☐ ATTENDANCE
   - ☐ OBSERVANCE OF RULES AND REGULATIONS
   - ☐ OBSERVANCE OF SAFETY RULES
   - ☐ COMPLIANCE WITH WORK INSTRUCTIONS
   - ☐ ORDERLINESS IN WORK
   - ☐ APPLICATION TO DUTIES

4. PERSONAL RELATIONS
   - ☐ GETTING ALONG WITH FELLOW EMPLOYEES
   - ☐ MEETING AND HANDLING THE PUBLIC
   - ☐ PERSONAL APPEARANCE

5. ADAPTABILITY
   - ☐ PERFORMANCE IN NEW SITUATIONS
   - ☐ PERFORMANCE IN EMERGENCIES
   - ☐ PERFORMANCE WITH MINIMUM INSTRUCTIONS

6. OTHER

7. SUPERVISORY ABILITY
   (ONLY FOR SUPERVISORS)
   - ☐ PLANNING AND ASSIGNING
   - ☐ TRAINING AND INSTRUCTING
   - ☐ DISCIPLINARY CONTROL
   - ☐ EVALUATING PERFORMANCE
   - ☐ LEADERSHIP
   - ☐ MAKING DECISIONS
   - ☐ FAIRNESS AND IMPARTIALITY
   - ☐ APPROACHABILITY

(CONTINUE COMMETNS ON ATTACHED SHEET)

OVER-ALL EVALUATION

ABOVE AVERAGE	XX AVERAGE	BELOW AVERAGE

SIGNATURE OF IMMEDIATE SUPERVISOR

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WRITING AFFECTIVE OBJECTIVES

Charles R. Doty

Rutgers University

Writing affective objectives seems to be difficult for most persons. Yet there are constant complaints about "others" not having the "right attitude", "manners", "craftsmanship", "reliability", "being responsible", etc. An examination of published and unpublished curriculum guides revealed most objectives in the affective domain are incorrectly written. It seems imperative that there be a "break through" in writing affective behavioral objectives.

Keys

The major question that must be answered is, what behavior/s must a person exhibit before one can assume a person has integrated a value? This question is a key to writing affective objectives. One must first define the values one wants a person to possess. These values are, unfortunately, so vaguely stated, e.g., show respect or good manners, that specific behavior is not usually stated. Therefore, what one must do is state specific cognitive and psychomotor behaviors which a person performs that may be inferred to indicate that a person has integrated a value.

In order to write affective objectives a framework is needed. Perhaps the following hierarchy will be useful:

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1.0 SOCIETAL VALUE/SCHOOL VALUE
1.1 PROGRAM GOAL
1.1.1 COURSE GOAL
1.1.1.1 UNIT OBJECTIVE (TERMINAL BEHAVIORAL)
1.1.1.1.1 LESSON OBJECTIVE (ENABLING OBJECTIVE)

Figure 1 - Hierarchy of Writing in the Affective Domain

Please note in Fig. 1 that at the 1.0 level, the affective value must be stated. In this hierarchy it is assumed the societal value and the school value are the same. This value (1.0) is then analyzed to determine the program goals (1.1). From each program goal one or more course goals (1.1.1) are stated. For each course goal one or more unit terminal objectives (1.1.1.1) are given. Each unit is broken into one or more lessons for which an enabling objective (1.1.1.1.1) is written.

Another key to writing in the affective domain is that affective behavior is probably inappropriate for lesson level objectives. The lowest level for a terminal affective behavior to be written is at the unit level. If the person performs the enabling objective/s, it may be inferred the person has achieved the unit affective (terminal) objective which may be inferred to indicate the student will fulfill the course and program goals and eventually possess the societal and school value.

The third key to writing objectives, in any domain, is that the person must be aware that there are two types of objectives, i.e., immediate and ultimate. Immediate objectives are those the student performs while under the jurisdiction of the school. Ultimate objectives are those the student demonstrates after leaving the school. For example:

A. Each person should vote in local, state, and national elections (ultimate).

B. Each person should vote in school elections (immediate).

Perhaps ultimate and immediate objectives may be the same. Perhaps not! What should not occur is a person not writing ultimate objectives because they may not be measureable--at least not in an easy manner. Do not forget the saying, "If it exists it can be measured."

Referring to the ultimate and immediate objectives above one should ask, are these properly stated? Would the statement, each person will value the democratic process of voting, be more correct? If so, statement A would be a program ultimate goal while statement B would be a program immediate goal. One must be very careful in analyzing what statements fit what levels in the hierarchy. Or more precisely, one must be careful to distinguish between a value and behaviors that might be inferred to be evidence that a person possesses that value.

Examples

A typical value is given below in a hierarchy consistent with Fig. 1.

1.0 Each person will want to be a productive member of society
1.1. Develop an awareness of the world of work
1.1.1 Develop an awareness of jobs in the world of work that have personal appeal
1.1.1.1 Identify jobs that are available to the student at his/her age level
1.1.1.1.1 Select those jobs in want ads which have personal appeal
1.1.1.1.2 Select those jobs appropriate for his/her age level
1.1.1.1.3 Judge the difficulty of a job when observing actual work situations in terms of his/her capabilities

Now the question is, can the unit level terminal objective (1.1.1.1 Identify jobs that are available to the student at his/her age level) be inferred to be a behavior that can <u>partially</u> indicate the person will have the value--will want to be a productive member of society? The word

"partial" is used because it is assumed that more than one behavior will be needed to indicate a person's possession of a value.

Perhaps the following example is more correct. What do you think?

1.0 Each person will want to be a productive member of society
1.1 Each person will seek work to be self sufficient
1.1.1 Each person will compare his/her potential to the requirements of jobs
1.1.1.1 Each person will identify jobs that are available within his/her potential
1.1.1.1.1 Select those jobs in want ads that have personal appeal
1.1.1.1.2 Select those jobs in want ads which are available at his/her age level
1.1.1.1.3 Select those jobs in want ads whose requirements are within the range of his/her aptitude test results
1.1.1.1.4 Evaluate those jobs in want ads which correspond to his/her interest tests
1.1.1.1.5 Evaluate the difficulty of a job when observing actual work situations in terms of his/her aptitude and interest tests

Are either of these examples acceptable to you? If not, rewrite the example using the value. If you do agree, define another terminal behavior and corresponding enabling objectives which may be used to infer a person has the value in the example. Remember the major question: what behavior/s must a student exhibit before you can assume your student has integrated a value? Try some other societal values as honesty, reliability, cleanliness, respect for others, craftsmanship, flexibility, or works well with others.

Teaching

The writer expects that you may find that you have seldom defined what you really expect your students to do to show they have certain values. If you have not defined these terminal affective objectives, it is certainly doubtful if you have planned curricula and teaching strategies to teach values.

Writing

It should be emphasized that many teachers write statements that define what they (the teachers) are to do rather than what is expected of the student. If you find yourself thinking about how to teach, you are probably going to eliminate student behaviors and/or write what you are going to do. Always ask, what do I expect the student to do?

As stated previously, "If it exists it can be measured." The writer has heard many times, "Why should I write that. I can't find out if my students will do it later or not." A point is that if some objective (ultimate in this discussion) is not written, it is doubtful if any planned instruction for the student achieving that objective is executed. The writer's advice is write the ultimate objectives, plan and execute instruction so the students, hopefully, will achieve the objectives, and perhaps, figure out how to measure the results later.

K-14 GOAL MATRIX

CAREER-VOCATIONAL DEVELOPMENT PROFILE

An Educational Planning Resource

by

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CONTENTS

		PAGES
INTRODUCTION		i
PHILOSOPHY		ii
GOAL 1.	SELF AWARENESS: IMPROVE SELF INVESTIGATION AND EVALUATION SKILLS.	1.
GOAL 2.	INTERPERSONAL SKILLS: IMPROVE HUMAN RELATIONSHIPS.	3.
GOAL 3.	DECISION MAKING: IMPROVE CAREER PLANNING AND DECISION MAKING SKILLS	5.
GOAL 4.	WORK HABITS AND ATTITUDES: IMPROVE WORK, ATTITUDES, AND APPRECIATION FOR CAREER SUCCESS.	7.
GOAL 5.	COMMUNICATION AND COMPUTATION SKILLS: IMPROVE PROFICIENCY OF COMMUNICATION AND COMPUTATION SKILLS.	9.
GOAL 6.	CAREER IMPLICATIONS OF SUBJECT MATTER: IMPROVE UNDERSTANDING OF THE RELATIONSHIP BETWEEN SCHOOLING AND WORK.	11.
GOAL 7.	SOCIO-TECHNOLOGICAL-ECONOMIC-POLITICAL UNDERSTANDING: IMPROVE UNDERSTANDING OF ECONOMIC, POLITICAL, AND SOCIAL FACTORS INFLUENCING CAREER OPPORTUNITIES	13.
GOAL 8.	CAREER INFORMATION: INCREASE KNOWLEDGE OF CAREER AND OCCUPATIONAL INFORMATION.	15.
GOAL 9.	MARKETABLE SKILLS AND ADAPTABILITY: IMPROVE JOB ACQUISITION AND RETENTION COMPETENCIES	17.
GOAL 10.	LEISURE PREFERENCES AND PERSONAL RESPONSIBILITIES: IMPROVE UNDERSTANDING OF PERSONAL/WORK/SOCIETAL RESPONSIBILITIES.	19.
	REFERENCES	21.

INTRODUCTION

This publication proposes the use of a goal-based curriculum to infuse strategies and address goals that meet the career development needs of all students. Its intent is to serve as an example of how outcomes expressed as goals look, developmentally, from Grade K through 12. As such, it is subject to adaptation and/or modification by persons or districts using it.

The important points to observe about the matrix are these:

1) Each major goal is broken out into more definitive statements which serve as descriptors of the particular area, e.g. there are six objectives that comprise self-awareness.

2) Each objective is then viewed in terms of grade-level groupings, so that indicators relevant to age level characteristics or maturation including social characteristics, learning characteristics and experiences, are reflected in each one. This should lead to continuity in the attainment of career competencies.

3) The goals may be addressed in any number of ways, thereby encouraging teachers and counselors to use their own techniques and strategies, their own content, and consider ways to use or adapt each goal or objective.

Uses of the matrix might include:

1. Discussion, revision, and adaptation by schools or districts in order to achieve an orderly infusion of career education into existing curricula.

2. Use of the agreed-upon objectives for conducting needs assessment and for establishing local priorities for career education.

3. Use of the objectives as a basis for developing learning approaches and instructional materials.

4. Use of selected objectives as the basis for instrument development and evaluation.

FOREWORD

CAREER EDUCATION? VOCATIONAL EDUCATION?

The Need To Address:

THE CAREER/VOCATIONAL EDUCATION CONCEPT

All educators should be acquainted with the works of such vocational development theorists as Super, Holland, Ginzberg, Tiedeman, Buehler, Roe and others. The reader should recall that during the mid-sixties the term vocational development gradually gave way to the term career development; the theory content however, remains unchanged.

While the Division of Vocational Education and Career Preparation is principally engaged in the preparation of students for employment during secondary and post-secondary schooling, vocational educators are fully cognizant of such education for employment as a cumulative kindergarten through adult process. Basic marketable skills include much more than just job performance skills learned in automechanics, business, or in computer, media or agricultural and related subject areas. Basic marketable skills which are essential for employability include the development of interpersonal skills, positive work habits and attitudes, knowledge of personal capabilities and interests, decision making skills, all of which evolve through a life-long process that begins during pre-school and early grades and are essential to all students.

According to Willa Norris, "...no one knows exactly how a satisfactory vocational choice is made. However, most theories of vocational development emphasize that it is a process - not a single decision - and it begins early in life. The process of vocational development, which leads to a viable and satisfying vocational choice, is a function of maturity. A vocational choice is a developmental process which takes place over an extended period of time." Defined by Super, it is, "...the behaviorial repertoire of the peer group in dealing with the same vocational tasks." Other authorities including Ginzberg, Hollingsworth and Erickson state that because of this developmental nature of career or vocational maturity, certain life stages can be identified. The career/vocational education concept, as presented in these papers, sets the stage for the identification and assessment of cumulative career/vocational knowledge, skills and attitudes functioning along a continuum, which, in Super's terms, extends through the life stages of growth, exploration, preparation, and implementation.

There are two conditions of which we must be cognizant in relation to Super's life stages concept, one; that the four stages can take place concurrently, two; that any given stage becomes a priority on the basis of the unique needs

of an individual during any time throughout that individual's life. In other words, some students are ready for the preparation stage and may enroll in high school vocational programs, while others seek preparation stage opportunities upon graduation from high school or after further education. Today, exploration and preparation is more and more common at retirement. The preparation stage therefore, in Super's set, refers to that period of time, unique to the individual, when occupational training as offered through vocational education, might be most appropriate.

It is generally agreed that all youth mature vocationally, as well as intellectually, physically, emotionally, socially, and become involved in a series of longitudinal decisions that transpire from early childhood to adulthood. Tiedeman asserts that vocational, or career maturity, is simply one facet of general personal adjustment and may be viewed as parallel to educational achievement. Thus, it is only logical to "test the water" along this continuum or longitudinal process.

The role of the educator is to ensure that instrucational strategies K through adult, geared to support and enrich the process of self-actualization, tap the identified components of career/vocational education leading to a realistic and satisfying occupational choice. These experiences would provide for each individual the opportunity to develop knowledge and skills that should result in the capability to; explore, plan, develop, assess, and manage his/her unique occupational career style. Success in the job, regardless of the level of training, degree of formality, or source of the preparation for job entry, is the result of putting together interrelated combinations of knowledge, attitudes, skills and opportunities. Each having its own requirements for development.

With the advent and growth of career education during the decade of the '70's there has been a tendency to place certain competencies under the career umbrella. Consequently, it may be inadvertantly assumed that such competencies receive less attention in the vocational education sector. Such a belief, put into practice, would adversely affect the total development of students enrolled in vocational programs. It is recognized that some educators have treated certain educational goals as "career" and others as "vocational". We propose to clarify the relationships between these applications. The term career/vocational will be used in the various papers that constitute this set to emphasize the value of combining the concepts, and to try to demonstrate to practitioners, who are now on either side of the fence, that the concepts should be totally integrated in practice.

Career education and vocational education, both curricular oriented expressions of career development theories, share a common base.

Both address:

- A life long process
- A process that is a unique expression of an individual's capabilities and initiative
- A process for attaining personal, social and economic independence and recognition
- On-going exploration, self-assessment and decision making activities
- Development of high level skills in formal and informal settings and throughout the schooling process with opportunity for specificity in secondary and/or continuing education.
- The value of leisure time for exploring and developing capabilities and interests
- Development as an extension of the self-concept
- The interrelationships of academic and occupational knowledge and skills
- A fundamental need for individual expression and acceptance
- The need of the individual to interact with and effectively impact the enviroment
- A process of self-fulfillment requiring persistance and the desire to do a job or task well.

The thrust of this MATRIX and the related publications is to identify such skills, behaviors, attitudes and knowledge that relate to this common base, and then place these in a manageable and appropriate K through adult schooling sequence attuned to developmental needs.

The value of these experiences could be assessed through such techniques as longitudinal studies. Just as research has demonstrated that adult behaviors

are patterned in the early primary and pre-school environment, it is proposed that career/vocational development studies should follow similar procedures. The career/vocational concept prescribed in this Matrix is fundamental to the proof of the concept.

To summarize, career/vocational education should include these core concepts:

- Education to be effective must consider, as an integral component a life long process for developing basic marketable skills needed for job entry and successful employment.

- Education should be designed so as o integrate career and educational skills, knowledge, attitudes pertinent to the planning, developing, managing and assessing of individual occupational career styles.

- The selection of a vocational program should be based on acceptance of the program by the student, readiness and need in terms of student intellectual, social, physiological, psychologicial and vocational maturity, to pursue and occupational choice. The choice should represent a highly appropriate option among the educational offerings.

- Vocational education to effectively contribute to occupational fulfillment must be compatible with the life goals, career style and self concepts of the individual.

- A vocational program should be flexible so that selections and adjustments may be made at any point in life that the individual may decide that personal and environmental conditions warrant it.

- The vocational program to be effective must complement the on-going career exploration and preparation process in which the student has participated from pre-school, kindergarten to the time and throughout the program choice.

- Vocational education programs, while focusing on specific occupational areas should offer wide flexibility in terms of capabilities of students as well as variety of applicability to occupations in related fields.

GOAL 1. SELF AWARENESS: IMPROVE SELF INVESTIGATION AND EVALUATION SKILLS.

OBJECTIVES	GRADE LEVEL: K-3	4-6
1.1 IS AWARE OF PERSONAL CHARACTERISTICS INCLUDING STRENGTHS AND LIMITATIONS.	A. IDENTIFIES THINGS THAT ONE CAN DO WELL; THINGS ONE DOES NOT DO WELL. B. IDENTIFIES PERSONAL AND PHYSICAL CHARACTERISTICS.	A. ASSESSES PERSONAL LIMITATIONS; SETS GOALS FOR IMPROVEMENT. B. IDENTIFIES PERSONAL CHARACTERTISTIC WHICH ONE VALUES AND DESCRIBES THE USE OF THOSE CHARACTERISTICS IN SCHOOL WORK.
1.2 EXHIBITS A POSITIVE SELF-CONCEPT.	A. DESCRIBES AND ACCEPTS ONE'S OWN CHARACTERISTICS. B. ACCEPTS DIFFERENCES OF SELF AND OTHERS. C. RELATES WELL TO OTHERS.	A. REACTS POSITIVELY TO CONSTRUCTIVE CRITICISM. B. ACCEPTS INDIVIDUAL DIFFERENCES OF SELF AND OTHERS.
1.3 IDENTIFIES A PREFERRED LIFE STYLE.	A. DESCRIBES ACTIVITIES ONE LIKES TO DO AT HOME AND AT SCHOOL.	A. IS ABLE TO DESCRIBE ELEMENTS OF LIFE STYLE FOR SELF AND OTHERS.
1.4 IDENTIFIES PERSONAL NEEDS, INTERESTS AND VALUES.	A. LISTS MOST FAVORITE AND LEAST FAVORITE THINGS.	A. IDENTIFIES PERSONAL LIKES AND DISLIKES. B. RECOGNIZES HOW VALUES SHAPE INTERESTS.
1.5 RELATES PERSONAL NEEDS, VALUES AND INTERESTS TO BEHAVIOR, DECISIONS, AND CAREERS.	A. NAMES PERSONAL PREFERENCES AND RELATES THEM TO ACTIVITIES. B. EXPLAINS WHY SOME ACTIVITIES ARE PREFERRED OVER OTHERS.	A. RELATES PERSONAL NEEDS, VALUES AND PRIORITIES TO TASK SELECTION, DECISIONS MADE IN SCHOOL AND OUT OF SCHOOL. B. UNDERSTANDS THAT ONE CAN USE ACTIVITIES FOR SELF-EXPRESSION.
1.6 UNDERSTANDS THE EFFECTS OF MATURATION ON SELF.	A. IDENTIFIES ACCOMPLISHMENTS ONE HAS DONE RECENTLY THAT WERE NOT DONE BEFORE. B. RELATES ACCOMPLISHMENTS TO GROWTH.	A. COMPARES DESCRIPTIONS OF CHILDREN AT DIFFERENT AGES AND EXPLAINS BEHAVIORS THAT OCCUR.

Self Awareness

7-9	10-12	13-14
A. Considers careers in terms of strengths and limitations. B. Formulates plans for increasing or using strengths and minimizing or compensating for limitations.	A. Is able to talk about personal attributes and limitations in an interview. B. Identifies personal values as they relate to work situations. C. Accurately describes own scholastic abilities.	A. Uses personal attributes to enhance the quality and success of job performance. B. Accepts limitations and/or compensates for them. C. Describes personal strengths and limitations in an interview.
A. Describes how self-worth is important for success in school, at home. B. Evidences self-acceptance.	A. Exhibits care for personal appearance. B. Describes how self-worth affects performance.	A. Exhibits pride in workmanship. B. Evaluates personal performance objectively. C. Exhibits a positive attitude. D. Exhibits job satisfaction.
A. Defines life style. B. Describes different life styles. C. Describes personal life style. D. Understands that careers are related to life style.	A. Projects future life-style based on present decisions. B. Describes implications of life style on career. C. Identifies from a variety of life styles those most compatible with personal characteristics and needs.	A. Adapts career to life style; adjusts life style to career. B. Sets and works toward goals that are consistent with preferred career and life style.
A. Recognizes and prioritizes personal needs and values in self and others. B. Differentiates between interests, abilities, and values.	A. Recognizes that personal values change. B. Understands the nature of personality in terms of needs and values.	A. Views self and others in terms of values and needs. B. Understands values, needs, and interests as they relate to stages in life cycle.
A. Knows the difference between needs and wants, values and interests. B. Explores personal interests. C. Explores careers in terms of interests, abilities. D. Identifies and uses sources of information about self.	A. Identifies, prioritizes values. B. Describes relationship between needs, values, interests and occupational choice. C. Shows how one's career can combine skills and interests. D. Recognizes that careers can be a means of expressing oneself.	A. Describes how behaviors relate to values, needs and interests. B. Adjusts behaviors to meet changing values and needs. C. Chooses activities to satisfy interests, needs, and values. D. Expresses oneself through career.
A. Recognizes characteristics that are a function of maturation as different from personality. B. Assumes responsibility for personal development.	A. Discusses human growth and development in terms of maturation. B. Can describe effects of maturation on self and discusses future effects.	A. Applies knowledge of maturation effects on self to understanding personal situations and behavior. B. Recognizes aspects of maturation that continue to affect self.

GOAL 2. INTERPERSONAL SKILLS: IMPROVE HUMAN RELATIONSHIPS.

OBJECTIVES	GRADE LEVEL: K-3	4-6
2.1 DEMONSTRATES AWARENESS OF THE EFFECT OF SELF ON OTHERS.	A. IS AWARE OF FEELINGS ABOUT SELF AND OTHERS.	A. SHOWS AWARENESS OF HOW ONE'S ATTITUDES AFFECT INTERPERSONAL RELATIONSHIPS.
2.2 REACTS POSITIVELY TO CONSTRUCTIVE CRITICISM.	A. ACCEPTS DIRECTIONS FROM OTHERS.	A. REACTS POSITIVELY TO SUGGESTIONS FROM OTHERS.
2.3 WORKS WITH OTHERS REGARDLESS OF SEX, RACE, CULTURAL DIFFERENCES.	A. IS AWARE OF HOW SELF IS DIFFERENT OR LIKE OTHERS. B. ACCEPTS CULTURAL AND RACIAL DIFFERENCES.	A. WORKS WELL IN GROUPS. B. VIEWS INDIVIDUAL DIFFERENCES POSITIVELY.
2.4 ANALYZES DIFFERENCES BETWEEN PERSONAL VALUES AND THE VALUE ORIENTATIONS OF OTHERS.	A. UNDERSTANDS THAT PEOPLE'S LIKES AND DISLIKES DIFFER.	A. DIFFERENTIATES OWN VALUES FROM THOSE OF PEERS.
2.5 AFFIRMS THE NEED FOR POSITIVE INTERPERSONAL RELATIONSHIPS.	A. IDENTIFIES SITUATIONS IN WHICH PEOPLE NEED TO WORK TOGETHER. B. MAKES POSITIVE STATEMENTS ABOUT OTHERS. C. RELATES WELL TO THOSE OF SIMILAR AND DIVERSE BACKGROUNDS AND TEMPERAMENTS.	A. IDENTIFIES REASONS INTERPERSONAL RELATIONSHIPS ARE IMPORTANT. B. RECOGNIZES THAT SOCIETY AND BUSINESS DEPEND ON CONTRIBUTIONS OF ALL WORKERS. C. IDENTIFIES WAYS IN WHICH PEOPLE INFLUENCE ONE ANOTHER.
2.6 RESOLVES CONFLICTS INVOLVING GROUPS.	A. IDENTIFIES REASONS FOR PROBLEMS THAT OCCUR WHEN PEOPLE WORK IN GROUPS AND MAKES SUGGESTIONS FOR IMPROVEMENT.	A. EXPLAINS HOW TO RESOLVE CONFLICTS THAT OCCUR IN GROUPS.
2.7 RECOGNIZES THE ROLE OF CONSTRUCTIVE AND POSITIVE COMPETITION.	A. UNDERSTANDS COMPETITION AND THE RULES FOR POSITIVE COMPETITION.	A. PARTICIPATES POSITIVELY IN COMPETITIVE GAMES.
2.8 IDENTIFIES AND USES INTERPERSONAL SKILLS.	A. IDENTIFIES WAYS IN WHICH HE/SHE IS ABLE TO HELP OTHERS.	A. IDENTIFIES AND EXHIBITS OR USES SOCIALLY ACCEPTABLE MANNERS.

7-9	10-12	13-14
A. EXPLORES CAREERS IN TERMS OF INTERPERSONAL RELATIONSHIPS NEEDED.	A. DESCRIBES PSYCHOLOGICAL AND SOCIAL ASPECTS OF INTERPERSONAL RELATIONSHIPS.	A. EVALUATES OWN INTERPERSONAL SKILLS OBJECTIVELY. B. TAKES APPROPRIATE STEPS TO IMPROVE INTERPERSONAL SKILLS.
A. DEVELOPS AND ROLE PLAYS SITUATIONS FOR GIVING POSITIVE SUGGESTIONS.	A. GIVES AND PROFITS FROM CONSTRUCTIVE CRITICISM.	A. USES INFORMATION GAINED THROUGH CONSTRUCTIVE CRITICISM TO EFFECT CHANGE IN SELF AND OTHERS.
A. IS ABLE TO DISCUSS AND RESPECT DIFFERENCES IN CULTURE, SEX, RACE. B. WORKS WELL WITH OTHERS.	A. IDENTIFIES HOW CULTURAL, SEX, RACIAL DIFFERENCES CAN BE AN ASSET TO A GROUP. B. DISCUSSES AND RESOLVES EXAMPLES OF RACIAL/CULTURAL/SEX BIAS. C. WORKS WELL WITH OTHERS REGARDLESS OF SEX, RACE, CULTURAL DIFFERENCES.	A. PARTICIPATES IN PROGRAMS AND ACTIVITIES TO OVERCOME SEX/RACE/CULTURE BIAS. B. WORKS EFFECTIVELY WITH OTHERS, REGARDLESS OF SEX/RACE/CULTURE.
A. COMPREHENDS THAT CERTAIN VALUES MAY NOT BE ASSIGNED EQUAL IMPORTANCE BY OTHERS. B. REACTS POSITIVELY TO SHARING DIFFERENCES IN VALUES WITH OTHERS.	A. DISCUSSES THE SIGNIFICANCE OF DIFFERENT VALUE ORIENTATIONS IN INTERPERSONAL RELATIONSHIPS AND BEHAVIORS. B. IDENTIFIES POSITIVE AND NEGATIVE EFFECTS OF DIFFERENT VALUE ORIENTATIONS.	A. ACCEPTS OTHERS HAVING DIFFERING VALUES ORIENTATIONS. B. RECOGNIZES WAYS IN WHICH DIFFERENT VALUE ORIENTATIONS CAN ENHANCE GROUP ACTIVITIES AND INTERPERSONAL RELATIONSHIPS.
A. IDENTIFIES ELEMENTS NECESSARY FOR POSITIVE AND EFFECTIVE TEAM WORK. B. IDENTIFIES INSTANCES IN WHICH INTERPERSONAL RELATIONSHIPS ARE ESSENTIAL TO PERSONAL AND GROUP EFFECTIVENESS.	A. DISCUSSES WAYS PEOPLE HAVING DIFFERENT STRENGTHS AND LIMITATIONS CAN COMPLEMENT EACH OTHER. B. USES POSITIVE MEANS FOR WORKING WITH OTHERS. C. ASSUMES AN ACTIVE ROLE IN GROUP SITUATIONS. D. UNDERSTANDS THE NEED FOR AND MAINTAINS OPEN COMMUNICATION.	A. TAKES STEPS TO IMPROVE INTERPERSONAL RELATIONSHIPS WITHIN A WORK GROUP.
A. PREDICTS CAUSES AND CONSEQUENCES OF WORKER CONFLICTS. B. RESOLVES CONFLICTS WITH PEERS.	A. DESCRIBES HOW CONFLICTS BETWEEN WORKERS ARE RESOLVED. B. KNOWS HOW TO USE COMPROMISE AND ARBITRATION EFFECTIVELY.	A. RESOLVES CONFLICTS BETWEEN WORKERS EFFECTIVELY. B. RESOLVES CONFLICTS BETWEEN SELF AND OTHERS SUCCESSFULLY.
A. RECOGNIZES WAYS IN WHICH COMPETITION SERVES INDIVIDUALS AND GROUPS.	A. ENGAGES IN POSITIVE COMPETITION. B. RECOGNIZES POSITIVE EFFECTS OF COMPETITION.	A. RESPECTS OTHERS IN COMPETITION WITH SELF. B. REACTS POSITIVELY TO COMPETITIVE SITUATIONS, WIN OR LOSE.
A. LISTS ALTERNATIVE WAYS OF EXPRESSING FEELINGS. B. DEMONSTRATES FLEXIBILITY AND ADAPTABILITY IN SOCIAL RELATIONSHIPS.	A. APPLIES AN UNDERSTANDING OF IMPORTANCE OF INTERPERSONAL SKILLS IN OCCUPATIONAL SUCCESS. B. IDENTIFIES SPECIFIC INTERPERSONAL SKILLS NEEDED IN PREFERRED OCCUPATIONS.	A. USES INTERPERSONAL SKILLS EFFECTIVELY WHEN WORKING WITH OTHERS. B. EFFECTIVELY USES INTERPERSONAL SKILLS REQUIRED IN ONE'S OCCUPATION.

GOAL 3. DECISION-MAKING
IMPROVE CAREER PLANNING AND DECISION-MAKING SKILLS.

OBJECTIVES	GRADE LEVEL: K-3	4-6
3.1 IS ABLE TO USE DECISION-MAKING PROCESSES.	A. RECOGNIZES THAT DECISIONS ARE BEING MADE ALL THE TIME. B. KNOWS APPROPRIATE SOURCES OF INFORMATION.	A. ANALYZES AND WEIGHS PROBABILITY AND DESIRABILITY OF ALTERNATIVES. B. USES APPROPRIATE INFORMATION SOURCES FOR MAKING DECISIONS.
3.2 RELATES PERSONAL VALUES, ABILITIES, INTERESTS TO DECISION-MAKING.	A. DESCRIBES DECISIONS MADE AND REASONS FOR THEM.	A. IDENTIFIES STATEMENTS OF INTENT THAT CORRESPOND WITH VALUES AND PRIORITIES.
3.3 ADAPTS DECISIONS TO CHANGING CIRCUMSTANCES.	A. RECOGNIZES DIFFERENT KINDS OF DECISIONS MADE.	A. SHOWS HOW DIFFERENT CIRCUMSTANCES CAUSE DECISIONS TO BE CHANGED.
3.4 ASSUMES RESPONSIBILITY FOR DECISIONS MADE.	A. RECOGNIZES THE RESULTS OF CHOICES MADE.	A. DESCRIBES CONSEQUENCES OF DECISIONS TO SELF AND OTHERS.
3.5 RECOGNIZES THE VARIETY OF SETTINGS IN WHICH DECISIONS ARE MADE AND THE INFLUENCES ON DECISION-MAKING.	A. NAMES PEOPLE AND THINGS THAT INFLUENCE DECISIONS.	A. DESCRIBES THE CONTEXTS IN WHICH DECISIONS ARE MADE. B. LISTS WAYS DECISIONS ARE INFLUENCED BY SIGNIFICANT OTHERS AND BY CIRCUMSTANCES.
3.6 DEMONSTRATES DECISION-MAKING SKILLS NEEDED IN PREFERRED OCCUPATIONS.	A. NAMES DECISIONS MADE WHEN CARRYING OUT SPECIFIC TASKS.	A. IDENTIFIES DIFFERENT KINDS OF DECISIONS MADE BY WORKERS IN CARRYING OUT THEIR JOBS.
3.7 SETS AND CARRIES OUT SHORT TERM AND LONG RANGE GOALS.	A. PLANS DAILY WORK TASKS. B. IDENTIFIES DAILY AND WEEKLY ACTIVITIES.	A. PLANS SOME LONG RANGE EDUCATIONAL AND PERSONAL GOALS. B. IDENTIFIES GOALS ALREADY REACHED.
3.8 DEMONSTRATES THE ABILITY TO PARTICIPATE IN GROUP DECISION-MAKING.	A. SHARES DECISIONS AND OPINIONS WITH OTHERS.	A. PARTICIPATES IN GROUP DECISION-MAKING. B. DISCUSSES WAYS IN WHICH GROUP DECISION-MAKING IS DESIRABLE.

7-9	10-12	13-14
A. OBTAINS ADEQUATE AND RELEVANT INFORMATION FOR DECISIONS. B. IDENTIFIES WAYS TO INCREASE OPTIONS AND REDUCE RISK.	A. DESCRIBES AND USES DECISION-MAKING PROCESSES EFFECTIVELY. B. USES INFORMATION SOURCES EFFECTIVELY IN MAKING DECISIONS.	A. EXPRESSES PERSONAL SATISFACTION WITH DECISIONS MADE. B. MAKES INFORMED DECISIONS.
A. DESCRIBES HOW PERSONAL VALUES INFLUENCE DECISIONS.	A. APPLIES KNOWLEDGE OF PERSONAL VALUES AND NEEDS TO PERSONAL AND CAREER DECISION-MAKING. B. USES VALID BASIS FOR APPRAISING PERSONAL ABILITIES AND ATTRIBUTES	A. MAKES PERSONAL DECISIONS THAT ARE CONSISTENT WITH PERSONAL VALUES AND NEEDS. B. MAKES CAREER DECISIONS THAT ARE CONSISTENT WITH VALUES AND NEEDS.
A. INDICATES HOW SOME CAREER DECISIONS MAY CHANGE DUE TO PERSONAL, SOCIAL, ECONOMIC, TECHNOLOGICAL CHANGES.	A. EVIDENCES THE ABILITY TO COPE WITH CHANGES BY ADAPTING DECISIONS MADE WHEN CHANGE IS INTRODUCED.	A. MAKES APPROPRIATE DECISIONS WHEN CHANGES OCCUR. B. ADAPTS AND ADJUSTS TO CHANGE SATISFACTORILY.
A. DESCRIBES AND DISCUSSES SHORT TERM AND LONG RANGE CONSEQUENCES OF DECISIONS.	A. RESOLVES CONFLICTING GOALS IN DECISION-MAKING. B. DISCUSSES IMPLICATIONS OF INDIVIDUAL AND GROUP DECISIONS.	A. FOLLOWS THROUGH ON DECISIONS AND COMMITMENTS. B. ASSUMES RESPONSIBILITY FOR PERSONAL DECISIONS AND THEIR CONSEQUENCES.
A. RECOGNIZES FACTORS THAT INFLUENCE CAREER CHOICES.	A. MAKES SATISFACTORY DECISIONS AND DISCUSSES THE INFLUENCE OF FACTORS IN THE DECISION-MAKING PROCESS. B. DEMONSTRATES EFFECTIVE PROBLEM SOLVING IN EMERGENCIES AND NON-ROUTINE SITUATIONS.	A. MAKES SATISFYING DECISIONS ON A BROAD RANGE OF DIVERSE PROBLEMS. B. IDENTIFIES MOST SIGNIFICANT FACTORS THAT DETERMINE DECISIONS MADE.
A. EXPLORES CAREER OPTIONS IN TERMS OF DECISION-MAKING SKILLS REQUIRED IN VARIOUS OCCUPATIONAL AREAS. B. EXPLORES AND ASSESSES PERSONAL DECISION-MAKING SKILLS.	A. EXPLORES THE NATURE OF DECISIONS THAT ARE MADE BY PEOPLE IN PREFERRED OCCUPATIONS. B. ASSESSES PERSONAL DECISION-MAKING SKILLS IN TERMS OF PREFERRED OCCUPATIONS.	A. IDENTIFIES AND APPLIES DECISION-MAKING SKILLS NEEDED FOR EFFECTIVE JOB PERFORMANCE. B. MAKES APPROPRIATE "NEXT-STEP" CHOICES.
A. DESCRIBES HOW PERSONAL ACTIVITIES IMPACT ON SHORT TERM AND LONG RANGE GOALS.	A. BUDGETS TIME AND OTHER RESOURCES EFFECTIVELY IN ORDER TO ACHIEVE INDIVIDUAL GOALS. B. MAKES DAILY DECISIONS THAT ARE CONSISTENT WITH LONG TERM GOALS.	A. MAKES PLANS AND DECISIONS THAT ENHANCE THE ATTAINMENT OF LONG-RANGE GOALS. B. PLANS AND CARRIES OUT LONG RANGE GOALS.
A. IDENTIFIES THE KINDS OF DECISIONS THAT ARE MADE IN GROUPS. B. DESCRIBES WAYS IN WHICH GROUP PROCESSES CONTRIBUTE TO OR IMPEDE DECISION MAKING.	A. LISTS FACTORS THAT CONTRIBUTE TO SUCCESSFUL GROUP DECISIONS. B. PARTICIPATES EFFECTIVELY IN GROUP DECISION-MAKING.	A. PARTICIPATES EFFECTIVELY IN GROUP DECISION-MAKING.

GOAL 4. WORK HABITS AND ATTITUDES.
IMPROVE WORK ATTITUDES, AND APPRECIATION FOR CAREER SUCCESS.

OBJECTIVES	GRADE LEVEL: K-3	4-6
4.1 DEMONSTRATES INITIATIVE AND INDEPENDENCE.	A. INITIATES TASKS. B. DEMONSTRATES THE ABILITY TO COMPLETE TASKS.	A. INITIATES TASKS. B. IS ABLE TO WORK INDEPENDENTLY.
4.2 EXHIBITS POSITIVE WORK ATTITUDE.	A. IDENTIFIES PERSONAL VALUE IN WORK. B. EXPLAINS HOW WORK AND WORKING BENEFITS SELF AND OTHERS.	A. WORKS WITHOUT COMPLAINING. B. IDENTIFIES POSITIVE ASPECT OF WORK. C. IDENTIFIES ATTITUDES OF SELF AND OTHERS THAT CONTRIBUTE TO SUCCESSFUL TASK ACCOMPLISHMENT.
4.3 UNDERSTANDS THE NATURE OF WORK.	A. UNDERSTANDS THE ROLE OF WORKERS IN HELPING PEOPLE. B. IDENTIFIES EXAMPLES OF WORK DONE AT SCHOOL, AT HOME, AND PERSONS IN OCCUPATIONS.	A. UNDERSTANDS MANY WORK FORMS IN SOCIETY.
4.4 PLANS, AND COMPLETES TASKS EFFICIENTLY AND THOROUGHLY.	A. RECOGNIZES STEPS IN CARRYING OUT SPECIFIC TASKS.	A. PLANS AND CARRIES OUT SIMPLE AND COMPLEX TASKS. B. CARRIES TASKS THROUGH TO COMPLETION.
4.5 USES HEALTH AND SAFETY HABITS.	A. PRACTICES PERSONAL HEALTH HABITS. B. DESCRIBES SAFETY BASIC PROCEDURES.	A. PRACTICES GOOD HEALTH HABITS. B. PRACTICES SAFETY AT WORK, AT PLAY.
4.6 PRACTICES POSITIVE WORK HABITS.	A. IDENTIFIES AND USES BASIC WORK HABITS.	A. IDENTIFIES VALUES AND PRACTICES WORK HABITS SUCH AS HONESTY, DEPENDABILITY, PUNCTUALITY.
4.7 UNDERSTANDS AND RESPECTS WORKER ROLES, INCLUDING THE ROLE OF SUPERVISORS.	A. FOLLOWS DIRECTIONS. B. SHOWS HOW SUPERVISION HELPS GET GROUP TASKS DONE. C. RESPECTS AUTHORITY. D. UNDERSTANDS THAT WORKERS ARE INTERDEPENDENT.	A. EXPLORES PERSONAL ATTITUDES TOWARD PERSONS IN AUTHORITY. B. IS ABLE TO GIVE AND RECEIVE INSTRUCTIONS. C. RECOGNIZES THE NEED FOR COOPERATION AMONG WORKERS.

7-9	10-12	13-14
A. ENGAGES IN ACTIVITIES INDEPENDENTLY. B. IDENTIFIES TASKS REQUIRING INDEPENDENT ACTIVITY; IDENTIFIES SELF MANAGEMENT SKILLS	A. ENGAGES IN INDEPENDENT STUDY, INDEPENDENT TASKS. B. IDENTIFIES WAYS IN WHICH INITIATIVE CAN ENHANCE JOB PERFORMANCE.	A. WORKS INDEPENDENTLY WHEN NECESSARY. B. DEMONSTRATES INITIATIVE ON THE JOB. C. USES SELF MANAGEMENT SKILLS FOR PERSONAL IMPROVEMENT.
A. IDENTIFIES WAYS IN WHICH OCCUPATIONS, JOBS AND WORK SITUATIONS CAN BE PERSONALLY SATISFYING. B. DEMONSTRATES RESPONSIBILITY FOR PERSONAL BEHAVIOR. C. IDENTIFIES SKILLS NEEDED FOR COPING IN STRESSFUL SITUATIONS.	A. IDENTIFIES WAYS IN WHICH WORKER SATISFACTION CAN BE ACHIEVED. B. IDENTIFIES WAYS IN WHICH WORKERS CAN IMPROVE THEIR WORK IN TERMS OF SATISFACTION. C. VALUES PROMPTNESS AND OTHER STANDARDS OF JOB PERFORMANCE.	A. MAINTAINS POSITIVE ATTITUDES ON THE JOB. B. CONTRIBUTES TO MORE POSITIVE WORKING SITUATIONS. C. APPLIES COPING STRATEGIES FOR ANALYZING AND MANAGING STRESS.
A. COMPARES PRESENT DAY WORK ATTITUDES WITH FORMER ATTITUDES. B. RESPECTS THE WORK OF PEOPLE IN ALL KINDS OF EMPLOYMENT.	A. ENGAGES IN AND/OR UNDERSTANDS A VARIETY OF PAID AND NON-PAID WORK ACTIVITIES. B. DESCRIBES HOW WORK CONTRIBUTES TO PERSONAL AND SOCIAL WELFARE.	A. PLANS AND CARRIES OUT A PROGRAM OF WORK THAT CONTRIBUTES TO THE BENEFIT OF SELF AND OTHERS.
A. USES PLANNING SKILLS TO INCREASE EFFICIENCY IN CARRYING OUT TASKS. B. DEMONSTRATES SELF-DISCIPLINE IN COMPLETING TASKS.	A. VALUES PLANNING IN ORGANIZING WORK AND COMPLETING JOBS. B. DEMONSTRATES INITIATIVE. C. SETS PRIORITIES FOR TASKS TO BE DONE AND ALLOCATES TIME ACCORDINGLY.	A. PLANS AND CARRIES OUT PERSONAL PROJECTS. B. PLANS AND CARRIES OUT PROJECTS ON THE JOB.
A. RECOGNIZES THE IMPLICATIONS OF GOOD HEALTH ON CAREERS. B. EXPLORES SAFETY ASPECTS OF JOBS.	A. IDENTIFIES AND PRACTICES GOOD HEALTH HABITS. B. EVIDENCES CONCERN FOR SAFETY OF SELF AND OTHERS.	A. MAINTAINS OPTIMAL HEALTH BY PRACTICING GOOD HEALTH HABITS. B. PRACTICES SAFETY IN PERSONAL LIFE AND ON THE JOB.
A. DESCRIBES AND PRACTICES ETHICAL STANDARDS AS THEY RELATE TO CAREERS. B. PRACTICES DEPENDABILITY AND PUNCTUALITY.	A. IDENTIFIES STANDARDS OF ETHICAL CONDUCT AND THE WAYS IN WHICH ETHICS AFFECT WORKERS AND SOCIETY. B. PRACTICES WORK HABITS THAT CONTRIBUTE TO PRODUCTIVITY AND JOB SATISFACTION.	A. USES ETHICAL STANDARDS OF CONDUCT. B. PRACTICES POSITIVE WORK HABITS.
A. EXPLORES CAREERS IN TERMS OF WORKER ROLES AND LEVELS, UNDERSTANDS MANAGEMENT FUNCTIONS. B. RECOGNIZES WAYS TO DEAL WITH NEGATIVE WORK SITUATIONS. C. EXPLORES WORK IN TERMS OF INTERPERSONAL SKILLS REQUIRED.	A. DISCUSSES THE SUPERIOR-SUBORDINATE RELATIONSHIPS IN OCCUPATIONS. B. RESPECTS AUTHORITY; KNOWS HOW TO WORK WITH SUPERVISION. C. DEMONSTRATES THE ABILITY TO WORK COOPERATIVELY WITH OTHER WORKERS.	A. BEHAVES APPROPRIATELY IN DIFFERENT WORK ROLES. B. RESPONDS APPROPRIATELY IN SUPERVISED OR SUPERVISORY CAPACITIES. C. WORKS COOPERATIVELY WITH OTHERS.

GOAL 5. COMMUNICATION AND COMPUTATION SKILLS
IMPROVE PROFICIENCY OF COMMUNICATION AND COMPUTATION SKILLS.

OBJECTIVES	GRADE LEVEL: K-3	4-6
5.1 DEVELOPS LISTENING SKILLS.	A. NAMES SITUATIONS IN WHICH LISTENING SKILLS ARE NEEDED. B. USES LISTENING SKILLS.	A. APPLIES LISTENING SKILLS IN SCHOOL AND OUT OF SCHOOL.
5.2 USES WRITING AND SPEAKING SKILLS EFFECTIVELY.	A. APPLIES ORAL AND WRITING SKILLS.	A. IDENTIFIES SITUATIONS REQUIRING HIGH LEVELS OF WRITING AND VERBAL SKILLS.
5.3 RELATES COMMUNICATIONS SKILLS TO CAREERS.	A. LISTS TASKS AND THE COMMUNICATIONS SKILLS NEEDED TO ACCOMPLISH THEM.	A. IDENTIFIES HOW COMMUNICATION SKILLS ARE NEEDED BY SELF AND OTHERS IN SCHOOL AND OUT OF SCHOOL.
5.4 USES OBJECTIVE AND CRITICAL THINKING.	A. ASKS QUESTIONS TO GAIN INFORMATION NEEDED IN SOLVING PROBLEMS.	A. UTILIZES BASIC RESEARCH SKILLS IN PROBLEM SOLVING. B. DEVELOPS AND USES SKILLS OF INQUIRY.
5.5 USES COMPUTATIONAL SKILLS EFFECTIVELY.	A. APPLIES BASIC COMPUTATIONAL SKILLS.	A. APPLIES COMPUTATIONAL SKILLS TO SCHOOL AND NON-SCHOOL ACTIVITIES.
5.6 RELATES COMPUTATIONAL SKILLS TO CAREERS.	A. NAMES SITUATIONS IN WHICH COMPUTATIONAL SKILLS ARE USED.	A. IDENTIFIES A VARIETY OF ACTIVITIES AND TASKS OF SELF AND OTHERS WHICH REQUIRE COMPUTATIONAL SKILLS.

7-9	10-12	13-14
A. DESCRIBES HOW GOOD LISTENING SKILLS APPLY TO CAREERS EXPLORED. B. UTILIZES GOOD LISTENING SKILLS	A. EVIDENCES ABILITY TO LISTEN EFFECTIVELY. B. KNOWS AND DEVELOPS LISTENING SKILLS NEEDED FOR PREFERRED CAREER.	A. USES LISTENING SKILLS EFFECTIVELY.
A. USES WRITING AND SPEAKING SKILLS IN SCHOOL AND OUT OF SCHOOL. B. RESEARCHES CAREERS ACCORDING TO WRITING SKILLS NEEDED	A. USES DIVERSE WRITING AND SPEAKING SKILLS EFFECTIVELY. B. DEVELOPS WRITING SKILLS NEEDED IN PREFERRED CAREER.	A. APPLIES SPEAKING SKILLS AND WRITING SKILLS IN CHOSEN CAREERS.
A. IDENTIFIES COMMUNICATION SKILLS NEEDED IN A VARIETY OF CAREER CLUSTERS AND LEVELS.	A. IDENTIFIES AND MASTERS COMMUNICATION SKILLS USED IN PREFERRED OCCUPATION.	A. COMMUNICATES EFFECTIVELY IN CHOSEN CAREERS.
A. IDENTIFIES SITUATIONS IN WHICH RESEARCH SKILLS ARE NEEDED.	A. CONDUCTS PERSONAL RESEARCH IN PROBLEM SOLVING AND INDEPENDENT LEARNING. B. APPLIES OBJECTIVITY IN PERSONAL AND CAREER PROBLEM SOLVING.	A. USES RESEARCH SKILLS IN PROBLEM SOLVING ON THE JOB.
A. MASTERS COMPUTATIONAL SKILLS APPROPRIATE FOR GRADE LEVEL AND INTERESTS.	A. APPLIES COMPUTATIONAL SKILLS APPROPRIATELY.	A. USES COMPUTATIONAL SKILLS NEEDED ON THE JOB EFFECTIVELY.
A. IDENTIFIES COMPUTATIONAL SKILLS NEEDED ON A VARIETY OF CAREER CLUSTERS AND LEVELS. B. EXPLORES CAREERS IN TERMS OF COMPUTATIONAL SKILLS NEEDED.	A. IDENTIFIES AND MASTERS COMPUTATIONAL SKILLS USED IN PREFERRED OCCUPATIONS.	A. ACQUIRES ADDITIONAL COMPUTATIONAL SKILLS NEEDED ON THE JOB.

GOAL 6. CAREER IMPLICATIONS OF SUBJECT MATTER: IMPROVE UNDERSTANDING OF THE RELATIONSHIP BETWEEN SCHOOLING AND WORK

OBJECTIVES	GRADE LEVEL: K-3	4-6
6.1 IDENTIFIES CAREER IMPLICATIONS OF SCHOOL EXPERIENCES.	A. IDENTIFIES WAYS IN WHICH THINGS LEARNED IN SCHOOL RELATE TO OTHER PERSONAL ACTIVITIES AND INTERESTS.	A. IDENTIFIES A VARIETY OF USES FOR SKILLS GAINED IN SCHOOL.
6.2 RELATES SPECIFIC SCHOOL EXPERIENCES TO JOB REQUIREMENTS.	A. IDENTIFIES SKILLS NEEDED FOR TASKS.	A. IDENTIFIES SKILLS OF WORKERS THAT WERE LEARNED IN SCHOOL.
6.3 DEVELOPS AN EDUCATIONAL PLAN TO ADDRESS CAREER CHOICE.	A. RECOGNIZES HOW THINGS LEARNED IN SCHOOL BENEFIT ONE NOW AND IN THE FUTURE.	A. RECOGNIZES THE NEED FOR ACHIEVEMENT IN SCHOOL IN ORDER TO GAIN SUCCESS IN FUTURE EXPERIENCES AND AT FUTURE GRADE LEVELS.
6.4 RELATES PERSONAL SKILLS TO SUBJECTS LEARNED IN SCHOOL.	A. SHOWS HOW PERSONAL SKILLS CONTRIBUTE TO SUCCESS IN SCHOOL.	A. IDENTIFIES SKILLS OF WORKING PARENTS THAT QUALIFY THEM FOR THEIR JOBS.
6.5 UTILIZES TEACHERS, COUNSELORS, AND OTHER SCHOOL PERSONNEL IN PURSUING CAREER INTERESTS.	A. RECOGNIZES TEACHERS AS A SOURCE OF INFORMATION RELEVANT TO PERSONAL INTERESTS.	A. RECOGNIZES TEACHERS AS A SOURCE OF CAREER-RELATED INFORMATION.

Career Implications Of Subject Matter

7-9	10-12	13-14
A. Explores careers and plans school experiences in terms of personal interests and skills already learned.	A. Engages in school activities related to career preferences. B. Applies knowledge and skills learned in school to personal life.	A. Identifies and enrolls in courses and school activities that enhance job performance. B. Applies skills learned in school in actual work situations.
A. Understands career implications of specific subject matter. B. Explores careers in terms of educational requirements.	A. Applies course content to career interests. B. Uses independent study opportunities to develop skills needed in preferred occupations.	A. Seeks to apply course content to job needs and skills.
A. Identifies skills associated with careers that are learned in school. B. Relates school subjects to their career implications.	A. Knows curriculum offerings in school. B. Selects programs appropriate for preparation for next steps in preferred career.	A. Continues to make and implement educational plans needed for proficiency in preferred occupations. B. Takes advantage of opportunities for advanced course work.
A. Shows how personal skills can enhance school and work performance. B. Describes how knowledge can be gained through some kinds of failures that might not be gained otherwise.	A. Values and uses skills learned outside of school and in occupational settings.	A. Develops personal skills needed for increased performance in school and on the job.
A. Uses in school and out of school resources when exploring careers. B. Knows how counselors and teachers can help identify relevant career information.	A. Seeks career related information from teachers and counselors.	A. Utilizes school teaching and counseling services in making and effecting career-related decisions.

GOAL 7. SOCIO-TECHNOLOGICAL-ECONOMIC-POLITICAL UNDERSTANDING: IMPROVE UNDERSTANDING OF ECONOMIC, POLITICAL, AND SOCIAL FACTORS INFLUENCING CAREER OPPORTUNITIES.

OBJECTIVES	GRADE LEVEL: K-3	4-6
7.1 UNDERSTANDS AND APPLIES SOCIOLOGICAL CONCEPTS.	A. IDENTIFIES THE VALUE OF WORKERS TO SOCIETY. B. SHOWS HOW WORK DONE IN THE CLASSROOM BENEFITS OTHERS.	A. RECOGNIZES THE SOCIAL FORCES THAT AFFECT WORKERS.
7.2 EVIDENCES ECONOMIC UNDERSTANDING.	A. DESCRIBES NEEDS AND WANTS IN RELATION TO SUPPLY AND DEMAND. B. IDENTIFIES PERSONAL RESOURCES.	A. INVESTIGATES SOURCE OF PERSONAL AND FAMILY INCOME.
7.3 EVIDENCES TECHNOLOGICAL UNDERSTANDING.	A. IDENTIFIES TECHNOLOGIES. B. COMPARES LIFE NOW AND IN THE PAST IN TERMS OF TECHNOLOGIES.	A. RECOGNIZES IMPACT OF TECHNOLOGY ON CAREERS AND ON JOBS. B. DESCRIBES PRINCIPLES THAT PERTAIN TO A BROAD RANGE OF TECHNOLOGIES.
7.4 EVIDENCES POLITICAL UNDERSTANDING.	A. EXPLAINS THE NEED FOR GOVERNMENT AND LAWS. B. SHOWS HOW RULES HELP CLASSROOM ACTIVITIES RUN MORE SMOOTHLY.	A. IDENTIFIES FORMS OF GOVERNMENT THAT EXIST AND THEIR IMPACT ON FORMS OF WORK. B. WORKS WITHIN THE FRAMEWORK OF RULES AND REGULATIONS.
7.5 IS AWARE OF THE NEED TO ELIMINATE SEX BIAS AND THE NEED TO COMPENSATE FOR THE EFFECTS OF SEX ROLE STEREOTYPING.	A. ILLUSTRATES HOW MEN AND WOMEN CAN DO SIMILAR KINDS OF WORK.	A. RECOGNIZES NEEDS OF BOTH MEN AND WOMEN IN CARRYING OUT CAREERS.

SOCIO-TECHNOLOGICAL-ECONOMIC-POLITICAL UNDERSTANDING

7-9	10-12	13-14
A. EXPLORES CAREERS IN TERMS OF SOCIOLOGICAL IMPLICATIONS OF WORK. B. EXPLORES WORK AND CAREERS IN TERMS OF SOCIAL REQUIREMENTS SUCH AS IN PROFESSIONS AND UNIONS.	A. RECOGNIZES FORMAL AND INFORMAL ORGANIZATIONS IN WORK SETTINGS. B. DESCRIBES THE ROLE OF UNIONS IN LABOR. C. DISCUSSES SOCIAL IMPLICATIONS OF PREFERRED OCCUPATIONS.	A. RESPECTS FORMAL AND INFORMAL RELATIONSHIPS ON THE JOB. B. PARTICIPATES EFFECTIVELY AS UNION MEMBER WHERE NECESSARY. C. DEALS EFFECTIVELY WITH SOCIAL FACTORS AT WORK.
A. APPLIES ECONOMIC PRINCIPLES TO PERSONAL RESOURCE MANAGEMENT. B. EXPLORES CAREERS IN TERMS OF THEIR ECONOMIC IMPORTANCE TO INDIVIDUALS AND TO SOCIETY IN GENERAL.	A. DISCUSSES AND APPLIES ECONOMIC PRINCIPLES. B. RELATES ECONOMIC PRINCIPLES TO PERSONAL ECONOMIC BEHAVIOR.	A. PARTICIPATES EFFECTIVELY AS A CONSUMER OF GOODS AND SERVICES. B. RECOGNIZES THE IMPACT OF ECONOMICS ON ONE'S OCCUPATION. C. MANAGES PERSONAL INCOME EFFECTIVELY.
A. TRACES IMPACT OF TECHNOLOGY ON CAREERS EXPLORED. B. EXPLORES CAREERS IN TERMS OF TECHNOLOGIES EMPLOYED.	A. ACQUIRES SKILLS NEEDED TO WORK WITH TECHNOLOGIES RELATED TO PREFERRED OCCUPATION.	A. MASTERS TECHNOLOGICAL UNDERSTANDING AND SKILLS NEEDED ON THE JOB. B. RECOGNIZES THE EFFECT OF TECHNOLOGY ON ONE'S OCCUPATION.
A. EXPLORES CAREERS IN GOVERNMENT. B. GIVES EXAMPLES OF LAWS THAT PROTECT WORKERS OR THAT RELATE TO EMPLOYMENT.	A. DESCRIBES INFORMAL AND FORMAL POLITICS THAT AFFECT CAREER. B. EVIDENCES GOOD CITIZENSHIP.	A. PARTICIPATES IN ACTIVITIES WITHIN THE FRAMEWORK OF FORMAL AND INFORMAL POLITICS. B. PARTICIPATES IN EFFECTING AND ENFORCING LAWS AND REGULATIONS.
A. CONSIDERS NON-TRADITIONAL AREAS OF EMPLOYMENT FOR MEN AND WOMEN. B. RECOGNIZES THE EFFECTS OF SEX ROLE STEREOTYPING ON INDIVIDUALS.	A. RESPECTS MEN AND WOMEN EQUALLY IN TERMS OF THEIR PERFORMANCE AT WORK. B. RECOGNIZES AND INDICATES SOLUTIONS FOR INCIDENTS OR PROBLEMS INVOLVING SEX BIAS.	A. ACCEPTS PERSONS IN NON TRADITIONAL WORK ROLES. B. WORKS TO ACHIEVE THE ELIMINATION OF SEX BIAS.

GOAL 8. CAREER INFORMATION:
INCREASE KNOWLEDGE OF CAREER AND OCCUPATIONAL INFORMATION.

OBJECTIVES	GRADE LEVEL: K-3	4-6
8.1 USES KNOWLEDGE OF PERSONAL VALUES, INTERESTS, NEEDS, LIMITATIONS TO EXPLORE CAREER OPTIONS.	A. IS AWARE OF PARENTS' SPECIAL TALENTS FOR JOBS IN AND OUT OF THE HOME. B. IDENTIFIES SKILLS NEEDED FOR CLASSROOM TASKS.	A. MATCHES PERSONAL QUALIFICATIONS WITH TASKS AND JOBS IN SCHOOL AND AT HOME. B. IS ABLE TO DESCRIBE NEEDS AND INTERESTS THAT ARE COMPATIBLE WITH OR CONFLICT WITH SOME OCCUPATIONS.
8.2 KNOWS HOW TO LOCATE AND USE APPROPRIATE CAREER INFORMATION.	A. NAMES PLACES WHERE A PERSON CAN FIND OUT ABOUT WORKERS AND WORKING.	A. RECOGNIZES DIFFERENCES AND SIMILARITIES IN JOBS IN COMMUNITY/STATE. B. LOCATES SOURCES OF CAREER INFORMATION.
8.3 IS AWARE OF A RANGE OF CAREER OPTIONS AND THEIR REQUIREMENTS.	A. DESCRIBES WORK DONE, CLOTHES WORN AND TOOLS USED BY A VARIETY OF WORKERS. B. IDENTIFIES PEOPLE WHO PRODUCE GOODS AND SERVICES THEY USE. C. IDENTIFIES REASONS PEOPLE WORK.	A. ILLUSTRATES THAT QUALIFICATIONS DIFFER FOR DIFFERENT KINDS OF WORK. B. RECOGNIZES THAT SOME WORKERS ARE SELF-EMPLOYED; UNDERSTANDS QUALIFICATIONS NEEDED FOR SUCCESS IN SELF-EMPLOYMENT.
8.4 USES DECISION-MAKING SKILLS TO IDENTIFY CAREER DIRECTIONS.	A. USES KNOWLEDGE OF SELF TO DETERMINE WHAT TASKS OR JOBS IN SCHOOL TO DO.	A. UNDERSTANDS THAT AVAILABILITY OF WORK IS RELATED TO DEMAND FOR GOODS AND SERVICES. B. ANALYZES CHOICES OF SCHOOL TASKS IN TERMS OF DECISION-MAKING SKILLS USED.

Career Information

7-9	10-12	13-14
A. Knows personal needs, interests, values, and explores careers according to these criteria. B. Explores careers in terms of potential satisfactions including monetary and non-monetary rewards.	A. Relates personal characteristics to preferred occupation. B. Studies modifications needed in self in order to succeed in preferred occupations.	A. Continues to explore career options including opportunities for advancement or change in terms of personal values, needs and skills. B. Expresses satisfaction with career and occupational choices in terms of values, interests and needs.
A. Uses relevant resources for exploring careers. B. Explores careers by clusters and levels. C. Uses community resources to obtain career information.	A. Locates, reads, and analyzes job market information. B. Relates current events to availability of jobs. C. Researches and up-dates job market information. D. Identifies employment trends in preferred occupation.	A. Uses appropriate sources such as labor market data and career information. B. Makes career decisions based on accurate and up to date information. C. Is aware of emerging occupations.
A. Explores a broad range of occupations in terms of their requirements. B. Identifies several different career options that require similar skills.	A. Expands career options by developing skills which can be combined in a number of ways in different careers. B. Understands behaviors that are likely or not likely to lead to job advancement.	A. Continues to explore career options and requirements. B. Assesses present job status in terms of possible options. C. Practices behaviors that contribute to job retention or advancement.
A. Analyzes career options in terms of a number of appropriate criteria including mobility, job security, and lifestyle. B. Uses procedures for reducing the number of options to arrive at tentative occupational choice.	A. Confirms career choices. B. Makes next-step decisions and plans based on occupational choice.	A. Expresses satisfaction with occupational choice. B. Explores need for direction or re-direction in one's occupation.

GOAL 9. MARKETABLE SKILLS AND ADAPTABILITY: IMPROVE JOB AQUISITION AND RETENTION COMPETENCIES.

OBJECTIVES	GRADE LEVEL: K-3	4-6
9.1 DEVELOPS SKILLS NEEDED FOR PREFERRED CAREER.	A. DEVELOPS SKILLS NEEDED FOR FOLLOWING PERSONAL INTERESTS. B. IS WILLING TO PARTICIPATE IN A VARIETY OF TASKS.	A. DEVELOPS SKILLS NEEDED FOR SPECIALIZED AND GENERAL TASKS.
9.2 USES JOB SEEKING AND JOB HOLDING SKILLS.	A. IS ABLE TO INTRODUCE SELF TO OTHERS.	A. MATCHES PERSONAL SKILLS TO TASK SELECTION APPROPRIATELY. B. KNOWS THE REASONS FOR RULES, REGULATIONS, AND STANDARDS ON A JOB.
9.3 REACTS POSITIVELY TO CHANGE.	A. DESCRIBES PERSONAL ATTITUDES WHEN CHANGE IS INTRODUCED.	A. MAKES SUGGESTIONS FOR COPING WITH CHANGE.
9.4 UNDERSTANDS THE NEED FOR ADAPTABILITY.	A. KNOWS HOW JOBS HAVE CHANGED OVER TIME - HISTORICALLY.	A. IDENTIFIES SITUATIONS WHEN ADAPTABILITY IS NEEDED IN SCHOOL, AT HOME.
9.5 UNDERSTANDS EFFECTS OF TECHNOLOGICAL CHANGE.	A. IDENTIFIES EXAMPLES OF RECENT CHANGES IN TECHNOLOGIES IN THE HOME.	A. RECOGNIZES CHANGES IN CAREER OPPORTUNITIES AS A RESULT OF OTHER CHANGES IN A GIVEN GEOGRAPHICAL AREA.

7-9	10-12	13-14
A. IDENTIFIES GENERALLY MARKETABLE SKILLS. B. EXPLORES OCCUPATIONS IN TERMS OF SPECIFIC SKILLS NEEDED.	A. DEVELOPS SKILLS NEEDED FOR NEXT STEP TOWARD PREFERRED OCCUPATIONAL AREA. B. DEMONSTRATES GENERAL EMPLOYABILITY SKILLS. C. DEMONSTRATES ENTRY LEVEL SKILLS IN PREFERRED OCCUPATIONS.	A. DEMONSTRATES SKILL IN CHOSEN VOCATIONAL AREA. B. SPECIALIZES IN SKILLS RELATED TO SUCCESS IN ONE'S CAREER.
A. UNDERSTANDS TERMINOLOGY USED IN WANT ADS. B. KNOWS SOURCES OF JOB INFORMATION.	A. READS AND INTERPRETS LABOR MARKET DATA. B. EXHIBITS INTERVIEW SKILLS. C. IS ABLE TO WRITE A RESUME.	A. OBTAINS AND MAINTAINS EMPLOYMENT. B. EXHIBITS SKILLS IN INTERVIEWING.
A. APPLIES PRESENT KNOWLEDGE TO NOVEL SITUATIONS.	A. USES IMPROVISATION TO COPE WITH EMERGENCIES.	A. VIEWS NEEDED CHANGE POSITIVELY. B. EXHIBITS ADAPTABILITY SKILLS.
A. UNDERSTANDS THE FREQUENCY WITH WHICH WORKERS CHANGE JOBS.	A. DESCRIBES INSTANCES WHICH MIGH STIMULATE OR PROVOKE JOB CHANGE AND INDICATES STEPS. B. DEMONSTRATES SUCCESS IN COPING WITH NEW SOCIAL AND WORK ROLES.	A. MAKES PLANS FOR DEALING WITH CHANGE. B. PLANS AND MANAGES DESIRED CHANGES.
A. EXPLORES EMERGING OCCUPATIONS.	A. CONSIDERS IMPLICATIONS OF FUTURE TECHNOLOGICAL CHANGE ON PREFERRED OCCUPATIONS.	A. IDENTIFIES AND SPECULATES ON FUTURE POSSIBILITIES BASED ON TECHNOLOGICAL CHANGE. B. USES KNOWLEDGE OF CHANGE TO FORECAST JOB PROBABILITIES.

GOAL 10. LEISURE PREFERENCES AND PERSONAL RESPONSIBILITIES: IMPROVE UNDERSTANDING OF PERSONAL/WORK SOCIETAL RESPONSIBILITIES

	OBJECTIVES	GRADE LEVEL: K-3	4-6
10.1	IDENTIFIES PERSONAL LEISURE PREFERENCES.	A. DESCRIBES HOBBIES AND INTERESTS OUTSIDE OF SCHOOL.	A. DISTINGUISHES LEISURE ACTIVITIES FROM OTHER KINDS OF WORK.
10.2	USES LEISURE TIME EFFECTIVELY	A. DESCRIBES THINGS LEARNED THROUGH PERSONAL INTERESTS, HOBBIES, LEISURE.	A. DESCRIBES BENEFITS DERIVED FROM USE OF LEISURE TIME.
10.3	IS ABLE TO PARTICIPATE IN INDIVIDUAL AND GROUP LEISURE ACTIVITIES.	A. NAMES ACTIVITIES DONE ALONE OR IN GROUPS DURING LEISURE TIME.	A. IDENTIFIES WAYS TO EXPAND PERSONAL INTERESTS. B. PARTICIPATES IN A VARIETY OF ACTIVITIES.
10.4	RELATES THE ROLE OF LEISURE TO CAREERS.	A. IDENTIFIES THE NEED FOR WORKERS TO HAVE TIME FOR THEIR OWN INTERESTS. B. IDENTIFIES HOW SKILLS LEARNED IN SCHOOL CAN BE APPLIED TO LEISURE ACTIVITIES.	A. SHOWS HOW SKILLS LEARNED IN LEISURE ACTIVITIES RELATE TO CAREER DIRECTIONS. B. RECOGNIZES THAT LEISURE ACTIVITIES CAN LEAD TO EMPLOYMENT.
10.5	COORDINATES CITIZENSHIP ROLE WITH LIFESTYLE AND CAREER.	A. PARTICIPATES IN CLASS PROJECTS, CLASS DECISIONS, CLASSROOM EVENTS. B. IDENTIFIES CITIZENSHIP ROLES IN THE COMMUNITY.	A. CONTRIBUTES TO CLASSROOM CLIMATE IN POSITIVE WAYS. B. MAKES SUGGESTIONS FOR CLASS AND SCHOOL IMPROVEMENTS.
10.6	PARTICIPATES AS A RESPONSIBLE MEMBER OF THE FAMILY.	A. DESCRIBES FAMILY MEMBERS AND THEIR ROLES. B. IDENTIFIES WAYS IN WHICH THE FAMILY CONTRIBUTES TO SOCIETY.	A. IDENTIFIES SELF AS A CONTRIBUTER TO FAMILY LIFE. B. DESCRIBES A VARIETY OF FAMILY STRUCTURES AND LIFESTYLES.

7-9	10-12	13-14
A. RELATES VALUES AND INTERESTS TO USE OF LEISURE TIME.	A. EVALUATES LEISURE ACTIVITIES IN TERMS OF PERSONAL VALUES AND GOALS.	A. PARTICIPATES IN LEISURE ACTIVITIES THAT ARE PERSONALLY SATISFYING.
A. ASSESSES THE VALUE OF HOBBIES AND ACTIVITIES IN PERSONAL DEVELOPMENT. B. EXPLORES A BROAD RANGE OF LEISURE ACTIVITIES IN TERMS OF THEIR BENEFITS TO SELF AND OTHERS. C. RECORDS AND EVALUATES LEISURE TIME USE.	A. VALUES LEISURE ACTIVITIES B. DISCUSSES PERSONAL, SOCIAL, ECONOMIC BENEFITS AND CONSTRAINTS OF PERSONAL LEISURE TIME USE. C. EXPRESSES SATISFACTION AND REASONS FOR SATISFACTION CONCERNING USE OF LEISURE.	A. VALUES LEISURE ACTIVITIES AS HAVING BENEFIT TO SELF AND OTHERS. B. EXPRESSES SATISFACTION WITH LEISURE TIME PURSUITS.
A. PARTICIPATES IN CLUB ACTIVITIES DESIGNED TO PROMOTE ACTIVITIES FOR LEISURE.	A. PARTICIPATES IN INDIVIDUAL AND TEAM ACTIVITIES SUCH AS SPORTS, CLUBS.	A. PARTICIPATES IN LEISURE ACTIVITIES THAT INVOLVE SELF AND OTHERS.
A. CONSIDERS LEISURE ACTIVITIES THAT SUPPORT OR COMPLEMENT OCCUPATIONS. B. EXPLORES OCCUPATIONS WITH REFERENCE TO THE AMOUNT AND TYPE OF LEISURE TIME THEY MIGHT PRESENT. C. EXPLORES OCCUPATIONS IN TERMS OF LEISURE INTERESTS.	A. DESCRIBES HOW LEISURE ACTIVITIES SUPPORT OR COMPLEMENT PREFERRED OCCUPATIONS. B. CONSIDERS OPPORTUNITIES FOR EXTRA-CURRICULAR ACTIVITIES WHEN SELECTING NEXT-STEP OPTIONS, SUCH AS COLLEGE.	A. PARTICIPATES IN LEISURE ACTIVITIES THAT COMPLEMENT CAREER AND OCCUPATIONAL CHOICE.
A. DESCRIBES THE RESPONSIBILITIES OF CITIZENS IN A DEMOCRATIC SOCIETY.	A. IDENTIFIES WAYS IN WHICH PEOPLE CAN BE ACTIVE MEMBERS OF THE COMMUNITY. B. PARTICIPATES IN CO-CURRICULAR ACTIVITIES TO DEVELOP CITIZENSHIP SKILLS.	A. ASSUMES AN ACTIVE ROLE AS A MEMBER OF THE COMMUNITY.
A. CONSIDERS ONE'S ORIENTATION TO FAMILY IN EXPLORING CAREER DIRECTIONS. B. DESCRIBES AND DISCUSSES PERSONAL AND FAMILY RELATIONSHIPS.	A. STUDIES AND APPLIES SKILLS NEEDED FOR EFFECTIVE FAMILY LIFE PARTICIPATION. B. IDENTIFIES PERSONAL VALUES WITH RESPECT TO FAMILY.	A. COORDINATES OCCUPATIONAL ROLES WITH PREFERRED INDIVIDUAL AND FAMILY ORIENTATION. B. APPLIES SKILLS LEARNED TO EFFECT POSITIVE FAMILY RELATIONSHIPS.

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(5/18/82)

The New Jersey Vocational-Technical Curriculum Laboratory
A Service of the Division of Vocational Education and Career Preparation
New Jersey Department of Education

COMPETENCY BASED VOCATIONAL PROGRAMS: RATIONALE AND PROCESS

by
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Ocean County Vocational-Technical Schools
Toms River, New Jersey

The purpose of this paper is to briefly describe the process whereby the Ocean County Vocational-Technical Schools are implementing a district model of competency based vocational education. In addition, reasons why competency based education has not been widely accepted will be discussed.

Burger and Lambrecht state in their Handbook for Vocational Instructors, that a vocational program is a competency-based instructional program when:

(A) The instructional content is based upon student performance of significant tasks which are actually performed by workers on-the-job,

(B) the learning achievement of students is measured by satisfactory student demonstration of effective and efficient performance of actual or simulated job tasks, and

(C) the instructional strategies are available to the student for attaining necessary skills, knowledges, and attitudes to perform occupational tasks (1974, p. 2-3).

Many other writers describing competency-based vocational education programs subscribe to Blanks' (1980) position in which he indicates "student evaluation decisions, including grading, certification, and exiting from the program, are based primarily on level of mastery" (p.31).

There is an immediate need to develop a systems approach to the analysis and validation of the curricula presently offered so that the employment skills developed within vocational schools are consistent with the current needs of business and industry. The need for competency-based validation can be further supported by:

1. Thorough and efficient school rules and regulations for the state of New Jersey including:
   - Teacher evaluation which requires examining and reporting pupil progress
   - Professional improvement plans
   - Measuring and reporting student competencies
   - Annual reports of school districts (and schools within the district) progress made toward achieveing specific educational objectives.
2. P.L. 94-482. Vocational program evaluation.
3. Increasing the emphasis on articulation agreements with community colleges.
4. Increasingly large numbers of individuals who are graduating from secondary vocational programs with the need (and intention) to continue their training in adult level programs.
5. Last, the lack of substantiated data validating many vocational-technical education programs.

The last point, the lack of validated curriculum is of particular importance and one which the writer has examined closely. Validating course content must be accomplished through a task analysis. However, this method normally takes a great amount of time and, therefore, is fairly expensive. Because of these problems, Ocean County Vocational Technical School educators have begun to use the DACUM* process for curriculum development.

DACUM is a single-sheet skill profile that serves as both a curriculum plan and an evaluation instrument for occupational training programs. It is graphic in nature, presenting definitions of an entire occupation on this single sheet of paper. This tends to prevent treatment of any element of the occupation in isolation, and conversely tends to promote treatment of

* See the attached article by Embree and Hart explaining DACUM in detail. Also attached is a partial list of the Dacum charts from the DACUM exchange.

each element as part of a larger whole. Is is, in fact, a form of an analysis of the occupation rather than a curriculum evolving from an analysis. General areas of competence required in the occupation are defined and each is subdivided into those individual skills (behaviors) that collectively enable an individual to perform competently within that general area. These skills are defined quite simply and are structured independently in small blocks on the chart. Each can serve as an independent goal for learning achievement.

A DACUM chart also contains a rating scale or guide that accomodates evaluation of skill development achievement for each of the defined skills or behaviors. The chart serves as a recordkeeping system, as all ratings of skills are recorded directly on a copy of the DACUM chart maintained for each trainee. Once an adequate skill profile in the form of ratings has been developed, the DACUM chart eventually becomes a diploma or certificate for achievement of skill development in the occupation.

From the DACUM chart, the instructor may select those duties and tasks which apply to his/her vocational program. If the course is determined to be for "beginning" students, entry level skills should be selected. Those duties and tasks have been identified by the DACUM participants as essential to the new worker on the job. Because the DACUM profile indicates the duties expected of a worker immediately and the duties expected over a period of time, the instructor can develop a curriculum not only for entry level preparation, but for continuing adult education.

From the DACUM profile the instructor determines the exit skill profile. The entry level skills identified are those which specific levels of mastery are required from program completers. These skills provide the teacher with specific targets upon which to focus criterion reference testing. To summarize, after the essential duties and tasks have been identified, and

the graduate skill profile has been developed, the teacher develops performance objectives, unit activities and performance tests for the program.

To conclude, few competency based vocational education programs operate at the secondary level because many educators feel they cannot support Blanks' position regarding open-entry and open-exit based upon mastery of skills, Unfortunately, most schools do not have the necessary freedom to comply to this position and, therefore, probably avoid the entire issue. Competency based vocational education can and has worked by using DACUM and providing teachers the motiviation to structure their curriculum on the DACUM analysis.

D A C U M

DEVELOPING A CURRICULUM

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(Permission To Reprint This Artice Was Obtained Via Telephone
From Mr. Embree On April 1, 1982)

DACUM

DEVELOPING A CURRICULUM

Introduction

DACUM means Developing A Curriculum. The word stands for the process used in developing the curriculum and for the final chart or product which is a statement of an occupational profile.

In developing any curriculum the first question that must be answered is "What must be learned?" In other words, what are the goals or objectives of the program? These objectives must be based on the work done in an occupation or speciality.

Several techniques can be employed to answer that first and most important question. Depending on the type of program (academic, business, technical, creative, etc.) some of the techniques used are:

- interviews with people involved in the job or subject area
- questionnaires
- research of existing curricula
- an expert in the field who can outline the objectives
- technical committee representing a cross section of the various fields within the curriculum area.

We have employed all of the techniques at one time or another and have found the last one to be the most efficient.

What Is The Process

A technical committee of from 8 - 10 people is asked to meet for three consecutive days.

DACUM is a process of job or occupational analysis which determines the skill requirements for a particular job or related job family. These skills and tasks become the basis for the units of instruction in the program.

DACUM analysis involves the following:

1. Only observable behaviour is identified. Knowledge or content specification is removed from the process.
2. The analysis is conducted by the industry or field - educators are not involved - it is a dynamic group activity.
3. The analysis results in a framework or DACUM Chart which is the basis for further analysis into detailed skills, knowledge and attitudes.

Developing A Curriculum

Selecting the DACUM Committee

1. Consider the range of industrial applications and the nature of the firms employing its skills.

2. Committee should be representative of the entire occupation or speciality being considered.

3. The committee should represent the major defined categories of a speciality or occupation. For example, there should be representatives from each of repairing, troubleshooting, designing, developing, supervising, selling.

4. (a) You should select individuals who are either presently working in the occupation being analyzed or are directly supervising individuals in this occupation. Personnel directors, executives, managers and trainers are not suitable participants as they are not really aware of the latest developments in the actual job area.

   (b) Present employment in the field;

   (c) Considered by associates to be competent and have an open mind;

   (d) Considered by associates to be capable of functioning as a member of a group;

   (e) Freedom from bias (training methods, costs, status, qualifications); Instructors do not function well on DACUM committees for this very reason;

   (f) Confidence;

   (g) Freedom to devote full-time for the required period - no part-time or drop-in members.

How Is It Done?

A coordinator with a broad background in curriculum, group dynamics and task analysis leads the committee through a number of definite steps.

1. Orientation by the co-ordinator -- the whole process is explained - examples of other charts are shown

2. Analysis of Occupational Sector -- the general job or skill area is delineated. This includes the identification of the professionals, technicians/technologists, tradesmen and/or semi-skilled positions in the occupation being studied.

3. Define General Areas of Competence -- the group identifies the major job functions that the person (mechanic, secretary, technician, etc.) under discussion would have to do.

Developing A Curriculum

Define General Areas of Competence (cont'd.)

These definitions are:

(a) preceded with the statement "The individual Must Be Able to..."

(b) made up of a transitive verb and objective

(c) not more than 8 words

(d) printed on 3 X 5 cards by the co-ordinator and truck up on a long blank wall (10 meters of continuous space)

4. Define the Individual Skills -- the committee identifies, isolates and defines the individual activities, tasks or skills for each General Area of Competence. The technique is the same as for the previous step. Each General Competence generates a "BAND" of skills which are placed up on the wall. The co-ordinator focuses the group on each general area of competence completing one band prior to examining another competency area.

5. Structure Individual Tasks into Proper Sequence -- each band is carefully reviewed and a horizontal sequence is decided upon. The skills are set out in the order that they would be met or required on the job. This horizontal sequence could be considered to represent a time line. The committee also decides on a vertical sequence where blocks from one band are related to blocks in other bands. The rationale for this type of sequencing lies in the fact that an individual performing the job may require one skill prior to performing another.

6. Skills Are Rated for Difficulty and Frequency -- each block is given an average rating on how frequently it is performed by members of the occupation. In a similar way each skill is rated by the committee based on their perception on how difficult it was for them to learn each skill originally.

How Is The Chart Interpreted?

General Areas of Competence (Terminal Performance Objectives) TPO	Skills Leading to General Competence (Intermediate Performance Objectives) IPO						
A			1	2	3	4	5
B	1	2		3	4	5	6
C	1	2	3	4		5	6
D	1	2	3	4	5	6	7

168 TIME LINE →

First Skill Required — Last Skill Required

Developing A Curriculum

How Is The Chart Interpreted? (cont'd.)

On receipt of a DACUM Chart, separate the pages and place them side-by-side to form a single flow chart. The general areas of competence should be located on the left hand side of the chart. They identify the major job functions of the occupation. We have shown them as "A", "B", "C" and "D" on the chart on the previous page. On most charts they are identified numerically.

The tasks or skills that make up a job function are located to the right of each general area of competence. These tasks or skills are sequenced according to when they are required on the job. On some charts tasks or skills relating to one band, or general area of competence, are related to the rest of the tasks or skills on the chart by their location relative to these other blocks. For example, in the diagram of the chart above, block one and two in general areas of competence B,C,D need to be acquired before block one of general area of competence "A". In the same way block 1 of general area of competence "A" and block 3 of general areas of competence "C" and "D" would be required prior to block three of general areas of competence "B".

Some charts also indicate a rating for each task or skill on each block

calculate final
payment

03.04 4.1 4.0

03 indicates the general area of competence

04 indicates the sequence of the task or skill within the general area of competence

4.1 indicates the rating by the committee on frequency of performance

4.0 indicates the rating by the committee on difficulty level

Frequency Rating Scale

5- 3 times a week or more
4- once a week to once every two weeks
3- once a month to quarterly
2- semi-annually to annually
1- never

Difficulty Rating Scale

5- very complicated with integrated skills and procedures
4- difficult with many steps
3- moderately difficult with some steps
2- straight forward with few procedures
1- simple with little training required

CURRENT DACUM CHARTS

THE FOLLOWING IS AN ALPHABETIC LISTING OF ALL DACUM CHARTS AVAILABLE AT THE DACUM EXCHANGE (DEX). A NOMINAL CHARGE OF TWO DOLLARS AND FIFTY CENTS ($2.50) EACH HAS BEEN ESTABLISHED TO COVER THE COST OF TYPING, PHOTOREDUCING, COPYING AND MAILING THE CHARTS TO INTERESTED INDIVIDUALS OR INSTITUTIONS.

PLEASE MAKE REQUESTS AND/OR SEND COPIES OF ANY CHART YOU PRODUCE TO:

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D A C U M C H A R T S

Legal Assistant	Holland College	1979
Welder-Fitter	Ontario Ministry of Education	1980
Machine Shop	Ministry of Colleges & Universities	1980
Payroll Clerk	Payroll Association of Canada	1980
Developmental Educator	Instructional ACCTion Center	1980
Civil Engineering Technician	Instructional ACCTion Center	1980
Competencies for a Secretary/Clerk	Iowa Lakes Community College	1980
Civil Engineering Technology	Ministry of Colleges & Universities	1979
Supervisor of Vocational Education in Pennsylvania	Monroe County Carea Vocational Technical School	1980
Parts/Inventory Control Counterperson	Northern College	1980
Dacum Dialogue-Discussion of Dacum Techniques	Northern College	1980
Farm Machinery Profile	Alberta Agriculture	1980
Sheep Production Profile	Alberta Agriculture	1980
Irrigated Crop Production Profile	Alberta Agriculture	1980
Dairy Production Profile	Alberta Agriculture	1980
Swine Production Profile	Alberta Agriculture	1980
Beef Production Skill Profile	Alberta Agriculture	1980
Farm Management	Alberta Agriculture	1980
Accounting Technology	Stark Technical College, Ohio	1981
Automotive Technology	Stark Technical College, Ohio	1981
Secretarial Technology	Stark Technical College, Ohio	1981
Part/Inventory Control Counterperson	Northern College	1980
Landscape Development & Nursery	Mininstry of Colleges & Universities	1981
Electronics Competencies	Durham Technical Institute	1981
Drafting Skill Profile	Durham Technical Institute	1981
First-Line Instructional Supervisor	Instructional ACCTion Center	1981
Electronics Engineering Technology	Tri-County Technical College	1981
Competencies for a Commercial Artist	Instructional ACCTion Center	1981

MONITORING STUDENT SKILL DEVELOPMENT
A SYSTEMS ORIENTED APPROACH
TO VOCATIONAL EDUCATION

VICTOR C. MORELLA
SALEM COUNTY VOCATIONAL-TECHNICAL SCHOOLS
WOODSTOWN, NEW JERSEY

Salem County Vocational Technical Schools has developed and is in the process of improving yearly, a systems oriented modular curriculum of which a major component is a student skill and development record. The need for this type of curriculum stems from the fact that Salem is a county with limited resources with a total population of 64,000 people, having both a community college and an area vocational technical school. The educational process must be flexible, comprehensive and highly tuned to individual student needs.

The systems approach to curriculum development with the emphasis on skill development records was utilized to meet the following policy of the school system:

> Programs must be designed to serve various age groups including high school students, regular adults needing upgrading or retraining, CETA, full and part time with multiple entry and exit points allowing a student to enter and leave the program with continuity.

The modular curriculum with integrated skill development records allows for:

1. Students to transfer from day to evening or evening to day with continuity.
2. Joint programming with the Salem Community College providing continuity. Presently three programs are in operation; Diesel Technology, Foods Technology and Cosmetology.
3. Employers to see what specific skills and trade terminology have been acquired by various students applying for positions.
4. Students to be constantly aware of their progress for motivation purposes.
5. For easy modification and updating of curriculum and skill development records because of the relative time base.
6. More effective instructional planning since each three hour modular

represents a session.

7. Documented budgeting of supplies and equipment.

8. Documented facilities planning to maintain state of the art training programs.

9. Continuity of programs when turnover occurs.

10. Students and parents to know what is going to be taught and how and what is to be expected of each student.

In order to accomplish effective curriculum development each year, all facits of the curriculum are reviewed and updated through faculty in service, faculty meetings and on an individual basis for each instructional program as the need occurs. Input from staff, program craft committees, general advisory board and research pertinent to changes in technology are an integral part of maintaining updated curriculum. The student skill development record represents what an individual student has achieved in concrete terms specific to the trade each year they are modified based on:

Teacher input

Craft Committee input

Advances in technology

Modified facilities

New equipment

Employment trends

Alumni input 1, 3 and 5 year follow-up surveys

Once specific areas are identified within the skill development record, each component of the total curriculum package must also be changed to reflect accurately what is added and what is deleted reducing the possibility of overburdening the curriculum, by arbitrarily adding things without giving consideration to items that should be deleted or reduced in terms of time commitments.

The following pages are excerpts from the Welding Program at the Salem County Vocational Technical Schools, one of 18 that are offered, part time and full time. All programs offered are approved for secondary as well as post secondary studies allowing adults to receive financial aid.

Salem County Vocational Technical Schools has received a grant to fully develop a complete curriculum package in 18 different program areas and these samples represent drafts of the project.

The following Table of Contents indicates the total program, however, only a sample of each section has been included in order to reduce the volume.

TABLE OF CONTENTS

Components of the Program Profile are:

1. Student Success Profile

2. Program Objectives

3. Course Outline listing major sections of instruction covering four semesters equaling 1080 hours of instruction.

4. Individual units of instruction detailing subtopics for each major section of instruction.

5. Student Activity Units which state hands-on learning components of the course of study.

6. Student Skill Development Records which are used to identify the student's level of skill achievement.

7. Progress Charts which are used in conjunction with the Skill Development Records to monitor student progress.

8. A Floor Plan of the shop listing equipment and its location.

INTRODUCTION

The Salem County Vocational Technical Schools Career Center is a shared-time vocational school offering occupational education programs primarily to shared-time eleventh and twelfth grade high school students. Post-Secondary students are also enrolled as tuition students.

PROGRAM PROFILE

The Program Profile details content of each occupational program and the sequence of presenting subject materials. The Program Profile has been developed through faculty input, research, administrative guidance and program craft committee input.

STUDENT SUCCESS PROFILE

SALEM COUNTY VO-TECH CAREER CENTER

WELDING

The following profile outlines the personal, health and educational attributes that have been significant predicators of success for students in the Welding Program. They are guidelines and are intended to be viewed as decision making information necessary to make the best choice of an occupational program since a minimum of a one year commitment is expected of students who attend the Vo-Tech Career Center.

Health Related Characteristics

Excellent physical condition is necessary since most Welders are apt to be in very uncomfortable positions for various lengths of time, and are required to work outside during inclement weather conditions. There should be no type of respiratory ailments since Welders are constantly breathing fumes that are hazardous. Normal or corrected vision is necessary since Welders are required to use precision measuring tools and different types of power machinery.

Dexterity

Dexterity and physical strength is important since the Welder is required to lift and position heavy materials. Perspective Welders should not have any symptoms of Acrophobia since Welders are required to work at very high heights from time to time. Good hand and eye coordination is highly recommended to be a successful Welder.

Attire and Cleanliness

Welders should become accustomed to wearing various types of protective clothing that is fire retardant to include trousers, sweatshirt and coveralls. Steel toe leather high top boots, safety glasses and leather gloves are worn. Due to safety requirements, long hair cannot be worn and hair should be short enough to be contained entirely inside the Welding cap and helmet.

Educational Background

A good basic knowledge of mathematics and pattern analysis is important since the Welder is constantly working from blueprints and sketches.

Employment Outlook and Conditions

The Welding field is full of opportunities for the individual

that is interested and motivated enough to complete the apprenticeship. Welding is becoming more and more specialized with research and development of new welding processes and opportunities are becoming available in these areas if the individual is willing to continue his or her education.

SALEM COUNTY VOCATIONAL TECHNICAL SCHOOLS

VO-TECH CAREER CENTER

PROGRAM OBJECTIVES

WELDING

FIRST YEAR

1. Students will maintain at least 92% attendance record.

   Assessment will be monthly based on the monthly attendance report distributed to each program.

2. Students will develop and display safe working practices as required in the Welding Program.
   in concert with New Jersey Vocational Safety Standards.

   Assessment will be continuous by instructional and supervisory personnel. Health and safety records will be used to document consistent application of standards.

3. Students will develop and demonstrate positive world of work attitudes consistent with acceptable shop, business, industry, and professional standards for the Welder.

   Assessment will be continuous utilizing daily performance grades, consistent monitoring of health and safety guidelines, counseling and disciplinary action, follow-up as is required.

4. Time sequenced curriculum, progress charts, skill development records, activity units, lesson plans and program objectives will be totally integrated in the Welding Program to formulate a unfield educational plan.

   Assessment will be through continuous instructor and supervisory monitoring.

5. Students will be capable of operating all power and hand tools properly with a minimum amount of supervision.

6. Students will complete safety tests in proper use of hand and power equipment in the shop including all welding machines and equipment. Each student will be required to pass the test with a 90% or better to operate this equipment.

7. Students will be capable of properly setting-up and performing manual arc, and Oxy-acetylene welding procedures independently. Students will be familiar with mig and tig welding procedures.

8. Students will be able to draw and identify all basic elements of a

blueprint using appropriate welding symbols.

9. Students will be able to operate the automatic plate and pipe beveling machines minimum supervision.

10. Students will be capable of brazing mild steel and cast iron.

11. Students will be proficient in utilizing the proper level of heat during the welding process to insure a good sound weld.

Assessment of 5-11 will be through hands-on performance, livework, tests and classroom participation. Progress reports will be issued at mid-marking period four times yearly and grades will be issued each 45 days of the instructional program.

SALEM COUNTY VOCATIONAL TECHNICAL SCHOOLS

VO-TECH CAREER CENTER

PROGRAM OBJECTIVES

WELDING

SECOND YEAR

1. Continued emphasis will be applied to job placement of all students completing programs successfully until 100% placement is achieved.

   Assessment will be initiated through the Job Placement Office.

2. Students will complete safety tests in all welding procedures, hand and power equipment and welding machines. Students will repeat testing until a 95% or above can be achieved.

3. Students will be capable of drawing a detailed blueprint using proper welding symbols.

4. Students will be proficient in arc welding pipe to plate, and pipe to pipe.

5. Students will be able to properly set-up and perform manual arc, mig, tig, and oxy-acetylene welding procedures independently.

6. Students will be familiar with all welding procedures concerning alloys such as aluminum, magnesium and stainless steel.

Assessment of 2-6 will be through hands-on performance, live-work, tests and classroom participation. Progress reports will be issued at mid-marking period four times yearly and grades will be issued each 45 days of the instructional program.

SALEM COUNTY VOCATIONAL TECHNICAL SCHOOLS

WELDING PROGRAM

SEMESTER I	270 Hours
Sections:	
I. Introduction & Orientation	6
II. General Safety	9
III. Historical Evolution of the Trade	15
IV. Skill Clusters & Employment Opportunities	30
V. Proper Use of Hand Tools	15
VI. Proper Use of Power Equipment	15
VII. Oxyacetylene Cutting Procedures	45
VIII. Oxyacetylene Welding & Brazing	60
IX. Basic Arc Welding I	60
X. Blueprint Reading	15

SEMESTER II	270 Hours
Sections:	
XI. Metal Identification & Basic Metallurgy	15
XII. Blueprint Reading	15
XIII. Basic Arc Welding II	60
XIV. Selection, Identification & Use of Rods	45
XV. Reaction of Heat on Various Metals	15
XVI. Testing of Welds & Inspection Procedures	15
XVII. Layout Procedures	45
XVIII. Types of Welds & Joints	15
XIX. Pipe I (Ocyacetylene)	15
XX. Pipe II (Smaw)	

SEMESTER III		270 Hours
Sections:		
XXI.	Orientation, Safety & Review	15
XXII.	Review Oxyacetylene (All Positions)	15
XXIII.	Hard Surfacing (Gas & Arc)	15
XXIV.	Blueprint Reading	15
XXV.	Advanced Arc I	45
XXVI.	Basic Heli-Arc I	45
XXVII.	Basic Mig I	45
XXVIII.	Layout Procedures	45
XXIX.	Changing Properities of Metals	15
XXX.	Other & New Welding Processes	15

SEMESTER IV		270 Hours
Sections:		
XXXI.	Sources of Electricity & the Welding Circuit	15
XXXII.	Layout Procedures	45
XXXIII.	Advanced Arc Welding II	45
XXXIV.	Advanced Heli-Arc II	30
XXXV.	Advanced Mig II	30
XXXVI.	Welding Codes & Certification Testing	30
XXXVII.	Non-Destructive Testing	15
XXXVIII.	Metals & Alloys	30
XXXIX.	How to Find a Job, Where, Resume, Ect.	15
XXXX.	Safety in the Trade	15

SALEM COUNTY VOCATIONAL TECHNICAL SCHOOLS

WELDING

SEMESTER I		270 Hours
Section I	Introduction & Orientation	6
Unit 1-1	Course Description, Method, Objectives	3
1-2	Rules, Course Requirements & Student Responsibility (Guidebook)	3
	Test: T1-A Activity:	
Section II	General Safety	9
Unit 2-1	School & Shop Safety Rules	3
2-2	Fire Protection, Ventilation & First Aid	3
2-3	Housekeeping & Storage of Materials	3
	Test: Ta-A Activity: A2-A	
Section III	Historical Evolution of the Trade	15
Unit 3-1	How the Trade originated	3
3-2	Needs & History of Blacksmithing	3
3-3	Early Welding Processes	3
3-4	Types & Uses of Metals	3
3-5	Early Forming of Metals by Hand	3
	Test: Activity: A3-A	
Section IV	Skill Clusters & Employment Opportunities	30
Unit 4-1	Job Titles, Specializing, Pay Scales	
4-2	Advancement, Unions	30
	Tests: Activity: A4-A	
Section V	Proper Use of Hand Tools	15
Unit 5-1	Safety	3
5-2	OSHA Requirements	3

ACTIVITY UNITS

WELDING

SEMESTER I

Section II General Safety

Activity A2A - Lecture & Shop Tour

Section III Historical Evolution of the Trade

Activity A3A - Lecture & Demonstration
Filmstrip

Section IV Skill Clusters & Employment Opportunities

Activity A4A - Theory Lesson, Filmstrip, 35 mm slide presentation. Both union & non-union shops will be covered.

Section V Proper Use of Hand Tools

Activity A5-A - Lecture, Demonstration. Students will demonstrate that they have the capability of operating equipment by passing a test before they will be allowed any hands-On activities.

Section VI Proper Use of Power Equipment

Activity A6-A - Lecture, Demonstration, safety tests on equipment. No students will operate power equipment until they have passed P.A. Test

Section VII Oxyacetylene Cutting Procedures

Activity A7A - Lecture, Demonstration. Student practical application will consist of students practicing different cutting procedures until they become competent enough to be evaluated.

Section VIII Oxyacetylene Welding & Brazing

Activity A8A - Lecture, Demonstration. Practical application will consist of welding five different types of joints on four positions.

SALEM COUNTY VOCATIONAL TECHNICAL SCHOOLS

BOX 350, R.D. #2
Woodstown, N.J. 08098

STUDENT SKILL DEVELOPMENT RECORD

Name _____ Program _____

Location: ____ Vo-Tech Career Center ____ Henry D. Young Center

Instructor _____ Date Completed _____

High School _____ Date of Graduation _____

School Year	Final Grade	Days Absent
197 - 197		
197 - 197		
197 - 197		
197 - 197		

Listed below are skills that have been identified as measures of individual achievement in this program. Student performance in each skill has been assessed by the instructor of the program through demonstrated laboratory participation and related clinical experience.

SKILL RATING CRITERIA:

1. Student has performed skill independently.
2. Student has performed skill under limited supervision.
3. Student has performed skill only under direct supervision.
4. Student has not been able to perform skill.
5. This area does not apply

Further information may be obtained by contacting school officials.

Please place date in the proper column

	1	2	3	4	5
I. Use of portable tool safety					
A. Electrode Holder					
B. Ground Clamp					
C. Chipping Hammer					
D. Wire Brush					
E. Ballpeen Hammers					
F. Files					
G. Hack Saw					
H. Sledge Hammer					
I. Portable Disc Grinders					
J. Bench Grinder					
K. Cold Chisels					
L. Portable Hand Drill					
M. Drill Press Operation					
N. Care of Drill Bites					
II. Use of Measuring Tools					
A. Six Ft. Tape & steel rules					
B. Combination square					
C. Framing square					
D. Wrap arounds to mark pipe cutting					
III Introduction to Welding					
A. Proper use of welding machine					
1. AC,DC, Reverse, & straight polarty					
B. Practice arc welding safety					
C. Use of proper electrode & size					
1. E. 6010					
2. E. 6011					
3. E. 7018					
4. E. 6013					

Name _____

Welding Program

Please place date in the proper column

1	2	3	4	5

Name: .....

Welding Program

Please place date in the proper column

1	2	3	4	5

4. Overhead (4F)

C. Groove Welds Plate 3/8"
   1. Flat (1G)
   2. Horizontal (2G)
   3. Vertical (3G)
   4. Overhead (4G)

D. Goove Weld Pipe
   1. (1G) pipe
   2. (2G) pipe, fix position
   3. (3G) pipe vertical roll position & fixed

OCCUPATIONAL COMPETENCY PERFORMANCE TESTING
PRINCIPLES OF TEST CONSTRUCTION
EDUCATIONAL TESTING AND SERVICE OCCUPATIONAL TESTING METHODOLOGY

BY
RAYMOND WASDYKE
EDUCATIONAL TESTING SERVICE
PRINCETON, NEW JERSEY

Performance tests are samples of job behavior administered under standardized testing conditions that closely approximate those found on the job. The similarity of the conditions and requirements of the test to those of the job make performance testing a highly desirable method of measuring occupational competency. Performance testing is an especially appropriate method of measuring occupational competencies that require a high degree of psychomotor skill. Performance tests also yield data that are very useful in validating cognitive measures of occupational competency.

The benefits of performance testing, however, do not accrue automatically by virtue of their perceived emphasis on "doing" rather than"Knowing." Although the developmental aspects of performance tests are different than cognitive tests, they still should meet high standards of:

- Reliability
- Validity
- Acceptability
- Feasibility

Reliability

The extent to which students' performance tests scores are dependent on (a) when they are tested, and/or (b) the examiner who scores the students' performance severely limits the interpretion of the scores. Educational desisions based on results of unreliable tests are likely to

contribute to the inefficient allocation of training resources to students who have in fact achieved a particular occupational competency, or, certify students as ready to enter the job market when further training is needed.

Three conditions are necessary for assuring a high degree of estimates of reliability of performance tests:

. standardization of test procedures;

. observation of performance;

. precision of scorer instructions.

Standardization of Test Conditions. A performance test is a small sample of a large domain. The difficulty of even the simple task of repairing a washer-type faucet can vary dramatically by changing the conditions. A student may fail to stop the leak of a faucet with a worn handle screw under a cap, a decorative bonnet, a worn washer, and a worn valve seat that must be ground. But that student may be better qualified than another who works on a faucet with an exposed, unworn screw and a replaceable valve seat. The reliability could be increased by requiring the repair of many faucets, but it is more economical to define the competence precisely enough so that both students work on and with standard equipment.

Observation of Performance. Competency of scorer's ratings are directly related to the specifications of the performance scoring instructions. For example, it is a common practice when replacing a toilet to check the ferrule plate to be certain it is clean and level. A performance test item that specifies "check ferrule plate" would most likely introduce scorer bias. Checking the ferrule plate could bee

interpreted in a variety of ways. Rubbing the ferrule plate with a cloth is a much more acceptable performance test item that would yield consistent results if observed by different scorers. A performance test must include detailed specifications of the performance being rate to assure a high degree of interrative reliability.

Precision of Scorer Instructions. Closely related to making performance test items observable is preparing precise scorer instructions. These instructions tell how to set up the test site, where to look when scoring each step, and what variations in performance to expect and how to rate the. The intent of such instructions is to standardize the subjectivity involved in rating a student.

Validity

The manner in which vocational teachers and students perceive occupational competency performance tests is important. It affects the motivation of students and scorers, and the extent to which scorers will be used for their intended purpose. Acceptability depends to a large extent on the apparent relevance of the test method of job performance (Osborn and Ford, 1977). The performance mode of testing by itself will enhance acceptability, because of its obvious relevance to actual job performance. But that acceptability will dissipate quickly if the test is not related to vocational curriculum. The puts special importance on interviewing a small sample of instructions and students to investigate their reaction to the appropriateness of the performance tests developed in terms of their curriculum.

Feasibility

Although performance tests are usually regarded as being an obviously valid way to find whether a student has (obtained) a particular skill,

they are also viewed as being time consuming and costly. The issue is the cost/benefit relation between performance tests and paper and pencil tests. The implication is obvious regarding the scope, number and varieties of performance tests to be developed during this project. For planning and budgeting purposes, Educational Testing Service(ETS) estimates that four performance tests will be developed and validated for each of the 14 occupations selected for test development, for example, in Task H.

Educational Testing Service (ETS) plans to use the job analysis data and related requisite competencies prepared in Task J as the basis for identifying which competencies prepared within each occupational area (N=14) will be assessed by performance testing. Occupational experts and test development committees willl rate each competency and related tasks concerning its feasibility for performance testing. This process should also insure acceptability of the performance tests developed by vocational practitioners. A total of 56 performance tests will be developed, four tests for each of the occupations selected, i.e., 14 different occupations.

Development of Performance Tests

Construction of performance tests begins with the identification of the requisite competencies of each occupation as described in Task J. The settings and special conditions, and minimum acceptable performance standards of the tasks included in the job analysis will provide the parameters for performance test contruction. The job and task analysis data derived in Task J is thus the start point for constructing performance tests. Given that data, four steps are required to construct each performance test:

. Determine product or process test

. Construct process items

. Construct product items

. Construct scorer's testing instructions

Determine Product or Process Test

The initial step after the competency/task has been identified for performance testing is to determine whether the performance item to be developed will be a process or a product item. This determination is made based on what the scorer must observe to evaluate the students' performance. The question that must be answered is whether the scorer must observe every element of task performance or whether the e scorer focus on some product produced during the performance of the task. It is desirable to achieve product-item measurements, if at all possible, since they simplify test administration. Product scoring is more easily standardized, does not require detailed concentration on the part of the scorer, and, for some tasks, can allow more than one individual to be tested at the same time.

All product tests have in common the characteristic that behavior is inferred from the product. Ideally it is not necessary to observe the examinee's performance; an evaluation of the product will indicate if the behavior is correct. In a process test, no inference is necessary. The examinee's actions are observed as they are performed.

In making the distinction between product and process scored items, it is important to understand that many (if not most) tasks do not fall conveniently into either category. Thus a performance test is made up of both process and product items. Most performance tests require

direct observations of students behavior (process) as well as a determination of the acceptability of the end product.

Construct Process Items

Process items will be developed that (a) describe the specific behavior that is being measured and (B) how this behavior should be rated. The starting point for process items will be the tasks included in each occupations job analyses data. These tasks/processes will be refined until they are stated in such a way that they can be scored accurately and consistently by different scorers. This development process includes the following steps:

1. The performance standard
2. A single pass/fall criterion
3. Only necessary processes
4. Only observable processes
5. Error tolerance limits
6. Time limits
7. Sequence

Specify the Standard. The task/process which is being measured must be described in sufficient detail that scorers can identify incorrect performance. The focus is on incorrect performance so that scorers can identify unacceptable behavior from what is stated in the item. In most cased a developer cannot assume that the statement of the action implies the standard for the action. The standard must be explicit. Standards will tell the scorer how much or how well the action must be accomplished. For example, "Tighten the lower right head bolt initially to 25 inch pounds," is an explicit statement of an action and standard

that reduces scores subjectivity. Any student who tightens the lower left head bolt first or tightens the correct head bolt to anything other than 25 inch pounds fails the item.

Specify Single Pass/Fail Action Each item should spell out a distinct action or point of measurement. This is to avoid confusing the scorer. FOR EXAMPLE THE MEASURE, "adds 5cc mercury and triturates for 10 seconds," could cause a problem in scoring when presented as a single statement because it requires single scoring of multiple actions. IF A STUDENT ADDS THE CORRECT AMOUND OF MERCURY BUT MIXES IT ONLY 8 seconds, a scorer may pass the student because the examinee performed "most" of the step correctly. This can be avoided by insuring that each item describes a single action to be scored pass/fail.

SPECIFY Necessary Processes Even when a test measures to the process of a task, it is not necessary or desirable that every step by rated. Presenting a scorer with an extremely long list of measures is counter productive. It creates the impression with the scorer that the test is long and difficult to score, and it interferes with the scoring procedure in that a scorer cannot observe the student while reading and marking the scoresheet. Thus it is necessary to limit the process measures that actually become part of the scoresheet. This is done by directing the scorer to only those actions that must be measured rather than listing all steps performed as part of the task. Steps need not be listed as items if they are dependent on other actions. For example, a series of steps migh involve selecting and assembling dies before threading pipes. Since the pipe cannot be threaded unless the correct dies are selected and assembled, only cutting the correct threads would be listed as items.

Specify Only Observable Process Items must describe physical acts, not mental or visual checks made by the examinee. Most of the time physical acts can be assured by controlling the conditions. For example, job analysis data migh specify that before cranking a generator the examinee must set the hand throttle at the idle position. This process item is only observable if, as part of the test conditions, the throttle is set to something other than idle. Likewise the process of connecting a tractor to a trailer might specify that the operator must check the area behind the tractor before backing up to the trailer. To score whether a student performs the "check", the performance test should specify that an object such as a cardborad box be placed behind the rear wheels. The "check" then becomes the observable act of the driver's removing the obstruction. If a "check" cannot be reasonable made into an observable process through the manipulation of test conditions it is better to eliminate the measure than to permit subjective scorer interpretation as to whether a "check" was performed.N

Specify Error Tolerance Limits Error tolerance establishes a range of accuracy on some standards. Such limits are often needed when dealing with standards involving measurements. A specific number should be avoided unless that number is the actual standard. Most measurements when subjected to close strutiny will allow a range, for example, "700-800 rpm", "within 10 centimeters", or + 15," If range is allowed, the range must be specified in the item along with instructions on how the measurement is made or what the mean reference point is.

Specify Time Limits Time limits fall into two categories. Some tasks or parts of tasks have inherent time limits which are as much a part of the task as any other step. These inherent time limits usually cause no problems and the test developed must only remain alert to their existence. Other time limits are not so straightforward. They exist because they are a reflection of job requirements. For example, the task be balancing a wheel or combing out a fall are not inherently time constrained by the task itself. Yet the time allowed to complete these tasks on the job is not unlimited. Time limits are therefore almost always included in tests if for no other reason than at some point the scorer must make the determination that to allow the examinee more time to try to complete the task will be pointless. These time limits are generally quite liberal. When these tasks are terminated because of time students exceeding the limit it is usually not the time limit that causes the student to fail typically, the reason is that the student has not achieved sufficient proficiency in the task. While time limits are generally included in tests, they must be used judiciouly, particularly in testing individuals in entry level performance where performance efficiency has not been optimized by practice and experience.

Specify Sequence Sequence becomes a matter of measurement only when it has some effect on the task being performed and when circumstances of the task allow the performer some choice in sequence. Many tasks are taught in sequence or have a sequence that really does not affect the outcome of the task. In other tasks the sequence of performance can seriously affect the success of the task, for example, soldering a joint. Other tasks may have a sequence, but stating the sequence, but

stating the sequence is superfluous because it is the only way that a task can be performed. Many disassembly or assembly tasks are of this type. Other tasks have only part sequence, and still others do not have a precise sequence but there are certain actions that must be performed before or after other actions.

The implication of these variations is that sequence cannot be treated casually. Listed sequence (from task analysis) cannot automatically be assumed where variations on sequence may be acceptable. Thus specific sequence or the acceptability of lack of sequence must be specified as an item.

Construct Product Items Product items specify what to look for and how to judge the product:

- Define product dimensions
- Define measurable standards for each dimension
- Specify tolerances for standards
- Specify scoring aidss
- Specify preservation of the product

Define Product Dimensions Once the general outcome of the product is determined (whether it is an interim or final product) it is necessary to identify all dimensions of that product. Dimensions depent on the product producted but dimensions to consider include among others:

- height
- width
- depth
- length

- format
- texture
- tightness
- strength
- elasticity
- precision
- tolerance
- tone

Not all of the dimensions which may be identified for a particulare product may be desirable for that product. Some dimensions may be difficult to be measured, meaningless, or not a true reflection of that procedures necessary to product the product.

Define Measurable Standards for Each Dimension It is of course necessary to apply standards to the dimensions which will be used to evaluate products. Such standards must be specifically stated. For example, "knot is tied near end" would not be specific enough; "knot is tied 2-4 inches from end" provides an observable standard. Furthermore, these standards must be measurable by relatively unsophisticated devices or procedures which are readily available to all scorers.

Specify Tolerance for Standards As in the error tolerances necwessaryy for measurement in process items, tolerances are often necessary for products items. Products that involve a numerical measurement usually have an measurement range. If a range of measurement is allowed on the job, that same range must be specified in the product test item .

Specify Scoring Aids Scoring aids are used to help standardized the rating. Several types of scoring aids that aree typically used include:

- overlays
- templates
- blueprints
- models

The use of scoring aids must be weighted against their cost to reproduce and their universal applicability. However, they should be considered when words do not convey an accurate understanding of the standards or when the use of aids will speed up the scoring process. For example, the task, "weld a bead", stitch a dart", or "write a circuit", involve products that are difficult to describe with words but can be clearly shown with a scoring aid.

Specify Preservation of Product The product must be preserved only until it can be evaluated and the score recorded. In most cases this rating and scoring will be done immediately after the product is produced. However,some products do not last long such as video displayr galvanometer readings. Others are rapidly altered by the passage of time, such as amalgam mix or wall plaster. Instruction must be provided to the scorer on procedures and time to record the scores of these type of products.

In some cased the scoring of the product is so complex that it must be preserved for later rating. Other products have characteristics that require evaluation after the product has had a change to "develop" or "set." In such cased a positive method for preserving and identifying the products, through tagging, recording or even video taping, must be provided.

Setting Test Administration Procedures Process and product items make up the elements on the scoresheet which are rated Pass/Fail for the

student. But to insure standardization in scoring and test administration the items are only a part of what is needed. The entire performance test instructs scorers what they must do to set up, administer, and score the test. Without such instructions any performance test is incomplete.

All essential information in the performance is provided in a concise and direct manner utilizing a standardized format. Although the amount of information presented will depend on the test, any unnecessary information will be avoided.

Six topical areas included in the preformance test are:

- Equipment
- Test site
- Set up instructions
- Test administration instructions
- Scoring instructions
- Instructions to the examinee

Equipment The equipment list specifies all equipment, materials, and supplies needed to administer and score the test. Equipment quantities are listed and in the case of expendable material the amount of material is usually the amount needed for the administration of one performance test.

Equipment conditions are also specified if the equipment is to be in other than its normal operating condition, e.g., "One Sunbeam, Norelco or Mr. Coffee coffee maker with burned outheating element."

Where equipment may have to be fabricated or constructed complete specification are included.

Test Site Test site requirement are closely related to equipment

requirements. Test site requirements specify either the minimal or the recommended site requirements. Test sites are dependent on the task but must be within the capability of test locations. Test site requirements are rarely a problem since testing requires essentially the same facilities as training.

Test Setup Instruction A list of proceduralized steps is prepared for the scorer stating those actions that must be done before testing each student. This includes preparing the test site, laying out the equipment, preparing the equipment and establishing certain equipment conditions as required by this test. These steps are required to ensure standarization among sites and between students at the same site. These instructions are presented in a format that can be used as checklist by the scorer. Diagrams and sketches are used as to illustrate the proper test setup.

Specifying the equipment conditions is a most important part of the test. As outlined earlier, the equipment conditions often determine the observability of the measures.

Test Administration Instructions These instructions cover any procedures the scorer must follow during the actual conduct of the test. They include such areas as assistance what can be given, safety precautions, test interruptions, equipment malfunctions, and termination. Not all tests need test administration instructions and while they are generally used to cover unusual occurrences, they are not designed to cover all situations, only those which experience has shown are likely to occur based on the nature of the task and the equipment.

Scoring Instructions The scoring instructions supplement the answer sheet by giving scorer additional information they may need to rate the

items. Not all items will need supplementary instructions but some will. The scoring instruction indicate to scorers what to look for and how to interpret what they see in those situations where including the information on the answer would make the measure to cumbersome or where it would not have universal applicability.

Instruction to the Student To contribute to test standardization and fairness it is desirable to restrict and control scorer-examinee interactions. To achieve this, it is necessary to give identical information to each student at the start of the test and to prohibit any other dialouge between the scorer and the student. Thus the instructions to the examinee are prepared for verbatim reading to the student and the scorer is typically limited to rereading the instructions in the case of examinee questions.

The instructions must be complete enough to provide students with all information they need to start the task performance. On the other hand, instructions must not be so lengthy that they tax the students' ability to digest and remember what they have been told. This balance is achieved by duplicating as closely as possible the initiating cues from the job.

A sample performance test for installing a brass union joint is found at the end of the discussion about performance tests.

Scoreer training is an integral part of the test program. In performance testing the scorer is a critical part of test administration. All answer sheets and administration instructions focus on the scorer and are designed to meet their needs. Yet the scorers' role is so important that additional scorer preparation is usually required prior to test administration. Three steps are involved in

developing materials to prepare scorers::

- Prepare materials to orient the scorer to performance testing
- Prepare scorer group exercises
- Prepare scorer individual exercises

Materials to Orient the Scorer To the Test System The scorer orientation outlines the role and responsibilities of the scorer as well as providing the scorer an orientation of the performance testing program overall. It is designed to involve the scorers personally and positively in the test administration and to answer questions they likely will have about performance testing.

Scorer Exercises There are several aspects of scoring that are universally applicable to all tests such as the methods of insuring standardization and fairness, handling external and internal test interruptions, equipment preparation, processing the students, and providing test feedback and others.

These and other similar aspects can be handled through the preparation of a model test administration situation. This is followed by another demonstration of the effects of how these aspects are demonstrated in which scorer-trainers evaluate a scorer during a test administration situation using a scorer evaluation check list. Both the strong and weak points of a scorer's test administration procedures are presented and discussion is controlled b a trainer to insure all areas presented in the model are covered.

Scorer Individual Exercises The most important and productive part of the scorer training are the individual scorer exercises. In constructing the exercises, each test is first analyzed to identify those areas where scorer problems are likely to occur during test

administration There is no set number of these areas to be identified per test but a minimum goal to provide a variety of training experiences is three.

During the training session, scorers are divided into groups of two or three persons with on being the scorers, and another playing the role of the student (examinee). The scorer sets up the test station as required by the test instructions and administers the performance test. The examinee, using the prepared test sheet, commits one or more of the actions as specified on the test sheet. The score is then critiqued by the student and the trainer. The score repeats the administration, if necessary, until the scorer thoroughly understands the test administration procedures.

The pilot tests provide an opportunity to assess the interrater reliability, acceptability, and feasibility of the performance tests, and the efficiency of the scorer training. Three subtasks are involved in this assessment:

- Measure interrater reliability
- Conduct scorer training workshop
- Collect acceptability and feasibility data

Measure Interrater Reliability Interrater reliability is the degree to which scorers observing the same student have comparable ratings. If the level of agreement is not acceptable, the tests will be revised. The interrater reliability study will be repeated each time a test is revised. Five steps will be involved in measuring interrater reliability:

- Schedule pilot tests for interrater reliability
- Train scorers

- Conduct tests
- Analyze data
- Revise tests

Schedule Pilot Tests for Interrater Reliability The analysis of interrater reliability requires at least 30 pairwise agreements or disagreements per performance test item. The opportunities for agreement or disagreement will be provided by having several scorers rate the same students at the same time. The most efficient method is to have four scorers rate five students. For example, in the folloiwng table, for any student Martin can agree with Lemon, Weaver, and Anderson (three); Lemon can agree with Weaver and Anderson(two); and Weaver can agree with Anderson (one). Since most schools will not have four instructors who are qualified to score tests in a given occupation, interrater

SAMPLE TABLE OF INTERRATER AGREEMENT FOR AN ITEM

Item 1.1

Scorers

Students	Martin	Lemon	Weaver	Anderson	Agreements	Disagreements
Chambliss	1	1	1	1	6	0
Randolph	0	1	1	0	2	4
Dent	0	1	1	0	2	4
Nettles	1	0	0	0	3	3
Munson	0	1	1	1	3	3
					17	13

Percentage of Agreement = 57

reliability studies will be conducted at locations where the numbers of scorers can be augmented by qualified instructors from nearby schools.

The conduct of the interrater reliability studies requires careful monitoring to insure against scorers' discussing the ratings, assuring a smooth flow of students, collecting answer sheets, and interviewing scorers to discover sources of disagreement This need for close monitoring makes it necessary to conduct the interrater reliability studies in phases. The maximum likely load for any location is two occupations for estimating the interrater reliability of the initial tests and two occupations for the revised tests. As indicated in the table on the following page, eight pilot tests will be used for estimating interrater reliability.

Train Scorers. One-half day preceding each interrater reliability pilot test will be devoted to training scorers. The training materials discussed earlier will be used for this training program.

Conduct Tests. Project staff will check the equipment layout and position the scorers before each test begins. A student will then take the test. All scorers will observe the performance and rate the products of performance without discussion. After all students have completed a test, the scorers will discuss the differences, if any, among their Pass/Fair ratings for each item.

PROJECTED SCHEDULE FOR INTERRATER RELIABILITY STUDIES BY OCCUPATION

(ROMAN NUMERALS)

	Initial	Revised
Pilot 1	I, II	
Pilot 2	III, IV	I, II
Pilot 3	V, VI	III, IV
Pilot 4	VII, VIII	V, VI
Pilot 5	IX, X	VII, VIII
Pilot 6	XI, XII	IX, X
Pilot 7	XIII, XIV	XI, XII
Pilot 8		XIII, XIV

Analyze Data The percentage of agreement will be calculated for each item, (i.e., the number of agreements divided by the number of possible agreements).

Revise Tests All items with percentage of agreement lower than 80% will be revised. The revision is likely to take one of four forms. The conditions may be changed to make a behavior more observable; a scoring aid may be added to facilitate more accuracy in measuring a product; the scoring instructions may be expanded to clarify the actions for the particular circumstance; or the item may be phrased more precisely. In addition, the scorer training materials will be revised to emphasize the procedure to score the item.

All tests that include items that are revised because of low interrater agreement will be tried out again in a second interrater reliability pilot test. If the item cannot be revised to produce an appropriate agreement level, the item will be deleted from the performance test.

Conduct Scorer Training Workshop

Once the interrater reliability of the revised performance tests has been demonstrated to be acceptable, scorers who will be involved in the remaining pilot tests will be trained. This training will be a one-day workshop conducted by project staff at a central location. The basis for the workshop will be the scorer training materials that have been based on results of the interrater reliability studies.

Collect Acceptability and Feasibility Data

Acceptability and feasibility data will be collected through questionnaires. Students will be asked whether they think their performance on the tests was a appropriate measure of their ability to

perform on the job. Instructors will be asked if the standard and tolerance of the tests is consistent with their curricula, whether the performance tested is an important part of the occupation as it is trained, whether all necessary equipment was available, whether the scoring instructions were clear, and whether additional guidance was needed to account for any unanticipated incidents.

Three major steps are involved in the field test of the performance tests:

- Conduct four scorer training workshops
- Monitor 20 sites in field test
- Prepare Test Administration Guide

Conduct Four Scorer Training Workshops

Instructors who will score the performance tests at field test schools will be trained during a one-day workshop. The vehicle for this training will be the scorer training materials revised following the pilot test training sessions. Approximately one fourth of the eligible scorers will be trained at each of four workshops.

Monitor 10 Sites in Field Test

Project staff will make site visits to 10 schools that are administering the performance tests. The primary purpose of these visits in regard to the performance tests is to determine the extent to which scorers follow the scorer's instructions. If deviations are found, the scorer training materials will be revised to give added emphasis to the pertinent instructions. A secondary purpose is to collect further data on the feasibility of the tests.

Prepare Test Adminstration Guide

The experience and data from the pilot tests and the field tests will

provide the basis for a Test Administration Guide for the performance test. This guide will prescribe appropriate application of the test, procedures and precautions for modifying the tests, and tables of percentages passing each test and each item.

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RESEARCH AND SOURCES CONCERNING LONGITUDINAL STUDIES

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The need for longitudinal studies has been stated previously by David J. Pucel in his Longitudinal Methods as Tasks for Evaluating Vocational Education:

> Now that educators have been asked to account for and justify vocational programs to federal, state, and local agencies, the need for more sophisticated techniques for evaluating vocational education has increased. (1979, p. 1)

It has been observed by the writer that the major research studies funded to assess the value of vocational education have been done by non-vocational educators. Perhaps this is appropriate. The point is vocational educators should begin designing their follow-up studies with enough sophistication that generalizable findings can be generated. The problem is that local education agencies may not have the time nor the expertise to design their follow-up studies to yield data which is valid for program improvement and is adequate for prediction of student success. This article was written to provide the reader with information that may be used to design follow-up studies.

The National Center for Research in Vocational Education recently completed a review of over 1500 follow-up studies (Mertens, 1980). Due to the methodology used in these studies the value of vocational education could not be stated nor was there much data collected within these studies

which could be used to predict student potential success. The predictive data, of course, could be used for advising and counseling students as well as adding to the body of knowledge (theoretical structure) of education. The problem is even more evident when one considers the information being requested by the American Vocational Education Association. The American Vocational Education Association (AVA) recently (1981) issued guidelines for preparing a report on vocational education's effectiveness. Eight questions were stated that must be answered:

1. What evidence do you have that vocational graduates have advantages in the market place over non-vocational students?

2. Does the course content of vocational education actually reflect changes in the demand for workers and in the needs of the work-place?

3. What evidence do you have that women are now enrolling in non-traditional vocational areas that offer better than average pay?

4. What evidence do you have that vocational education is enrolling minority students in vocational areas that offer better than average pay?

5. What evidence do you have that vocational education is effective in assisting workers in efforts to upgrade their competencies, increase their productivity, and increase promotability?

6. What evidence do you have that vocational education is working effectively with handicapped students?

7. What evidence do you have that vocational education graduates often go into business for themselves?

8. What evidence do you have of the impact of vocational education in your community over the past ten or fifteen years?

The AVA questions are the traditional head count, political based concerns. These are, of course, vital and must be answered. There are other questions that have equal significance which may, if answered, reveal the reasons for the significance - or lack of - of vocational education. For example, two approaches have contributed to the development of a theory of vocational education. (Evans and Herr, 1978; Gilli 1973)

The first emphasizes the need of students to acquire specific job skills in their formal education to qualify for work upon exiting school. The stress on work competence emerged from the difficulty of finding jobs for individuals entering the labor market with no specific skills after 12 to 16 years of formal education.

The second approach involves developing conceptual and cognitive abilities as the base for more specific training that can be obtained on the job. Its proponents argue that both long range career potential of graduates and the needs of employers may be better served by a broader education that promotes learning ability and flexibility, and can be articulated more readily into higher levels of specialized or professional education. (Klemp, 1977) The question is which of these two approaches, or others, is best for what persons? To conclude this section one might consider one statement by Gillie that seems to sum up the situation of vocational educators in systematically studying and guiding vocational education. Gillie (1976) in some frustration wrote:

> Why must vocational education always be subjected to annual and biennial fads? Witness the onslaught upon the procession brought on by vocational educators' infatuation first with career education and then competency-based vocational education. Does a profession turn to fads, rather than well-designed, tested, and evaluated research endeavors, for its future direction because of a dearth of its own original ideas? Why is vocational education more susceptible than some of the other professions. (p. 248)

RELATED RESEARCH

Longitudinal studies have been identified as a national priority. This fact can be observed by reviewing the publications from the National Center for Research in Vocational Education. Beginning in 1975 Paul wrote a manual for conducting follow-up studies. In 1978 Franchak and Spirer produced the first volume of guidelines for follow-up studies. Volume II was published

in 1979. Farley (1979) produced a thesaurus of outcome questions. Pucel's (1979) Longitudinal Methods as Tools for Evaluating Vocational Education was published. Darcy (1979), Taylor, et al. (1979), and McKinney and Harvey wrote documents concerning perspectives for evaluation and interpreting outcome measures. Bolland's (1979) annotated bibliography of related literature was also made available. In 1980 Ashe and Vogler examined follow-up studies on employer satisfaction. Franken, et al. (1980) wrote the specifications on longitudinal studies, and Darcy (1980) analyzed criteria, standards, and procedures.

STATUS OF FOLLOW-UP STUDIES

The status of follow-up seems best described by reporting the William G. William and Fred A. Snyder study (1974). They reviewed follow-up studies in measuring attainment of educational goals stated in comunity college catalogs and literature. A 12-item questionnaire was sent to 720 public comprehensive community colleges that began offering technical programs prior to 1970; 520 colleges responded. The content of the 85 most sophisticated follow-up studies was analyzed. They found the motivation for such follow-up studies in order of priority are: 1) curriculum evaluation, 2) accountability to the public, 3) requests from governing or accrediting associations, 4) student services evaluation, and 5) personnel evaluation.

Nearly all community colleges conducted follow-up studies, but less than half produced a formal written report of the findings. The quality of the written reports greatly varied. Over three-fourths of the 85 follow-up studies analyzed in detail included only program graduates, excluding non-graduates. Typically the surveys were sent to all graduates. of a program. One-fourth of the surveys were based on samples. Many

follow-up studies did not contain data collection methodology. It was found that 60% of the college contact graduates only once. Over half of the reports contained data that was not interpreted. Although the William and Snyder study concerned community colleges, after reading extensively as revealed in the reference section of this proposal, the writers believe the same conditions exist for secondary vocational schools.

SOURCES

The reader may refer to the bibliography of this article to locate those studies and projects reviewed by the writers which my save the reader time in finding pertinent material to prepare longitudinal studies. For instance, the reader interested in longitudinal studies and wondering what instruments are available should see Federico and Landis (1979a) for a listing of competencies and corresponding measurement instruments. The titles of the other sources in the bibliography give an accurate description of their content and seem the most relevant sources as judged by the writers.

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